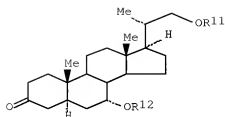


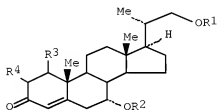
## AUTHOR SEARCH

L18 ANSWER 1 OF 3 HCAPLUS COPYRIGHT 2009 ACS on STN  
 ACCESSION NUMBER: 2005:1106865 HCAPLUS Full-text  
 DOCUMENT NUMBER: 143:387237  
 TITLE: Process for the preparation of 5 $\alpha$ -pregnane derivative via reduction of carbon-carbon double bond in pregn-4-en-3-one compound  
 INVENTOR(S): Sugioka, Takashi; Ohzono, Shigeo; Koyakumaru, Kenichi; Nakagawa, Naoshi  
 PATENT ASSIGNEE(S): Kuraray Co., Ltd., Japan  
 SOURCE: PCT Int. Appl., 27 pp.  
 CODEN: PIXXD2  
 DOCUMENT TYPE: Patent  
 LANGUAGE: Japanese  
 FAMILY ACC. NUM. COUNT: 1  
 PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
WO 2005095434	A1	20051013	WO 2005-JP6828	20050331
W:	AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BW, BY, BZ, CA, CH, CN, CO, CR, CU, CZ, DE, DK, DM, DZ, EC, EE, EG, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, MZ, NA, NI, NO, NZ, OM, PG, PH, PL, PT, RO, RU, SC, SD, SE, SG, SK, SL, SM, SY, TJ, TM, TN, TR, TT, TZ, UA, UG, US, UZ, VC, VN, YU, ZA, ZM, ZW			
RW:	BW, GH, GM, KE, LS, MW, MZ, NA, SD, SL, SZ, TZ, UG, ZM, ZW, AM, AZ, BY, KG, KZ, MD, RU, TJ, TM, AT, BE, BG, CH, CY, CZ, DE, DK, EE, ES, FI, FR, GB, GR, HU, IE, IS, IT, LT, LU, MC, NL, PL, PT, RO, SE, SI, SK, TR, BF, BJ, CF, CG, CI, CM, GA, GN, GQ, GW, ML, MR, NE, SN, TD, TG			
EP 1743902	A1	20070117	EP 2005-728917	20050331
R:	AT, BE, BG, CH, CY, CZ, DE, DK, EE, ES, FI, FR, GB, GR, HU, IE, IS, IT, LI, LT, LU, MC, NL, PL, PT, RO, SE, SI, SK, TR			
CN 1934124	A	20070321	CN 2005-80009530	20050331
US 20070149494	A1	20070628	US 2006-594164	20060926
IN 2006CN03994	A	20070706	IN 2006-CN3994	20061031
PRIORITY APPLN. INFO.:			JP 2004-108419	A 20040331
			WO 2005-JP6828	W 20050331
OTHER SOURCE(S):	MARPAT 143:387237			
ED Entered STN:	14 Oct 2005			
GI				



I



II

AB A process for the preparation of compound I [R11, R12 = H, protecting group of hydroxy], characterized by reduction a pregnane derivative II [R1 = protecting group of hydroxy; R2 = H, protecting group of hydroxy; R3 and R4 represent hydrogen atoms or combine together to form a bond.] with alkali metals or alkaline earth metals in the presence of a proton donor, amine and/or ammonia, was disclosed. For example, to a solution of (20S)-21-tert-butylidimethylsilyloxy-7 $\alpha$ -hydroxy-20-methylpregn-4-en-3-one (5.00 g) and tert-butanol (1.78 g) in THF (100 mL) was added liquid ammonia (100 mL) at -50 °C. Then, Li metal (0.17 g) was added, while maintaining the reaction temperature between -50 and -40 °C, the reaction was stirred -40 °C for 3 h. The resulting reaction was treated with ammonium sulfate (1.59 g) followed by removal of ammonia, aqueous work-up and silica-gel purification to give (20S)-21-tert-butylidimethylsilyloxy-7 $\alpha$ -hydroxy-20-methyl-5 $\alpha$ -pregn-3-one in 96% yield. Of note compds. I are useful synthetic intermediates for the preparation of squalamine.

REFERENCE COUNT: 6 THERE ARE 6 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L18 ANSWER 2 OF 3 HCAPLUS COPYRIGHT 2009 ACS on STN  
 ACCESSION NUMBER: 2005:1103797 HCAPLUS Full-text  
 DOCUMENT NUMBER: 143:387233  
 TITLE: Method for producing 5 $\alpha$ -pregnane derivative  
 INVENTOR(S): Koyakumaru, Kenichi; Sugioka, Takashi; Ohzono, Shigeo; Nakagawa, Naoshi  
 PATENT ASSIGNEE(S): Kuraray Co., Ltd., Japan  
 SOURCE: PCT Int. Appl., 33 pp.  
 CODEN: PIXXD2  
 DOCUMENT TYPE: Patent  
 LANGUAGE: Japanese  
 FAMILY ACC. NUM. COUNT: 1  
 PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
WO 2005095431	A1	20051013	WO 2005-JP6818	20050331

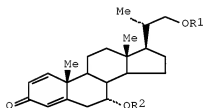
W: AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BW, BY, BZ, CA, CH,

Serial No.:10/594,163

CN, CO, CR, CU, CZ, DE, DK, DM, DZ, EC, EE, EG, ES, FI, GB, GD,  
 GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ, LC,  
 LK, LR, LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, MZ, NA, NI,  
 NO, NZ, OM, PG, PH, PL, PT, RO, RU, SC, SD, SE, SG, SK, SL, SM,  
 SY, TJ, TM, TN, TR, TT, TZ, UA, UG, US, UZ, VC, VN, YU, ZA, ZM, ZW  
 RW: BW, GH, GM, KE, LS, MW, MZ, NA, SD, SL, SZ, TZ, UG, ZM, ZW, AM,  
 AZ, BY, KG, KZ, MD, RU, TJ, TM, AT, BE, BG, CH, CY, CZ, DE, DK,  
 EE, ES, FI, FR, GB, GR, HU, IE, IS, IT, LT, LU, MC, NL, PL, PT,  
 RO, SE, SI, SK, TR, BF, BJ, CF, CG, CI, CM, GA, GN, GQ, GW, ML,  
 MR, NE, SN, TD, TG

CN 1938330 A 20070328 CN 2005-80010110 20050331  
 EP 1767540 A1 20070328 EP 2005-728889 20050331  
 R: AT, BE, BG, CH, CY, CZ, DE, DK, EE, ES, FI, FR, GB, GR, HU, IE,  
 IS, IT, LI, LT, LU, MC, NL, PL, PT, RO, SE, SI, SK, TR  
 US 20070197490 A1 20070823 US 2006-594163 20060926  
 IN 2006CN03996 A 20070706 IN 2006-CN3996 20061031  
 PRIORITY APPLN. INFO.: JP 2004-108434 A 20040331  
 WO 2005-JP6818 W 20050331

OTHER SOURCE(S): MARPAT 143:387233  
 ED Entered STN: 14 Oct 2005  
 GI



I

AB 5 $\alpha$ -Pregna-3-one derivs. and 5 $\alpha$ -pregna-1-en-3-one derivs. are prepared by reacting a pregnane derivative represented by the general formula I [R1 = OH-protecting group; R2 = H, OH-protecting group] with a metal selected from alkali metals and alkaline earth metals in the presence of a proton donor, an amine and/or ammonia. The title compds. are intermediates for squalamine. Thus, (20S)-21-tert-butylidimethylsilyloxy-7 $\alpha$ -hydroxy-20-methyl-5 $\alpha$ -pregna-3-one and (20S)-21-tert-butylidimethylsilyloxy-7 $\alpha$ -hydroxy-20-methyl-5 $\alpha$ -pregna-1-en-3-one were prepared by the title method.

REFERENCE COUNT: 6 THERE ARE 6 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L18 ANSWER 3 OF 3 HCAPLUS COPYRIGHT 2009 ACS on STN  
 ACCESSION NUMBER: 2005:1103727 HCAPLUS Full-text  
 DOCUMENT NUMBER: 143:386684  
 TITLE: Process for the preparation of cyclopropane monoacetal derivative and intermediate therefor  
 INVENTOR(S): Koyakumaru, Kenichi; Ueyama, Shingo; Ujita, Katsuji; Hayashibara, Tatsuhiko; Nakagawa, Naoshi; Akiba, Toshifumi; Saito, Tatsuru  
 PATENT ASSIGNEE(S): Kuraray Co., Ltd., Japan; Daiichi Pharmaceutical Co., Ltd.  
 SOURCE: PCT Int. Appl., 24 pp.

DOCUMENT TYPE: CODEN: PIXXD2  
 LANGUAGE: Patent  
 FAMILY ACC. NUM. COUNT: Japanese  
 1  
 PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
WO 2005095318	A1	20051013	WO 2005-JP6407	20050325
W:	AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BW, BY, BZ, CA, CH, CN, CO, CR, CU, CZ, DE, DK, DM, DZ, EC, EE, EG, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, MZ, NA, NI, NO, NZ, OM, PG, PH, PL, PT, RO, RU, SC, SD, SE, SG, SK, SL, SM, SY, TJ, TM, TN, TR, TT, TZ, UA, UG, US, UZ, VC, VN, YU, ZA, ZM, ZW			
RW:	BW, GH, GM, KE, LS, MW, MZ, NA, SD, SL, SZ, TZ, UG, ZM, ZW, AM, AZ, BY, KG, KZ, MD, RU, TJ, TM, AT, BE, BG, CH, CY, CZ, DE, DK, EE, ES, FI, FR, GB, GR, HU, IE, IS, IT, LT, LU, MC, NL, PL, PT, RO, SE, SI, SK, TR, BF, BJ, CF, CG, CI, CM, GA, GN, GQ, GW, ML, MR, NE, SN, TD, TG			
EP 1731495	A1	20061213	EP 2005-727496	20050325
R:	AT, BE, BG, CH, CY, CZ, DE, DK, EE, ES, FI, FR, GB, GR, HU, IE, IS, IT, LI, LT, LU, MC, NL, PL, PT, RO, SE, SI, SK, TR			
US 20070191643	A1	20070816	US 2006-593129	20060918
US 7358400	B2	20080415		

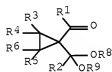
PRIORITY APPLN. INFO.:

JP 2004-104862 A 20040331  
 WO 2005-JP6407 W 20050325

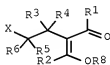
OTHER SOURCE(S): MARPAT 143:386684

ED Entered STIN: 14 Oct 2005

GI



I



II

AB A process for industrially advantageously and easily producing a cyclopropane monoacetal derivative represented by the general formula I [R1-R6 = independently H, (un)substituted saturated hydrocarbon, aryl, alkenyl or aralkyl; R8, R9 = independently (un)substituted saturated hydrocarbon, aryl or aralkyl] through a small number of steps, characterized by reacting a halogenated unsatd. carbonyl compound represented by the general formula II [R1-R6 and R8 are defined as above; X = halo] with an alcoholate. For example, reaction of tri-Et orthoformate with 2,3-dihydrofuran, and followed by chlorination with thionyl chloride, gave 4-chloro-2-ethoxymethylidenebutanal (III). Reaction of III with sodium ethoxide provided 1-(diethoxymethyl)cyclopropanecarbaldehyde.

REFERENCE COUNT: 6 THERE ARE 6 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

## STRUCTURE SEARCH

L3 ANSWER 1 OF 1 CASREACT COPYRIGHT 2009 ACS on STN  
 AN 136:247742 CASREACT Full-text  
 TI Process for the preparation of pregnane derivatives  
 IN Nakazawa, Makoto  
 PA Kuraray Co., Ltd., Japan  
 SO PCT Int. Appl., 52 pp.  
 CODEN: PIXXD2  
 DT Patent  
 LA Japanese  
 IC ICM C07J005-00  
 CC 32-5 (Steroids)  
 FAN.CNT 1

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI	WO 2002020552	A1	20020314	WO 2001-JP7639	20010904
	W: CA, CN, HU, IN, MX, US RM: AT, BE, CH, CY, DE, DK, ES, FI, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE, TR				
	JP 2002201199	A	20020716	JP 2001-261586	20010830
	CA 2416850	A1	20030120	CA 2001-2416850	20010904
	EP 1325928	A1	20030709	EP 2001-961343	20010904
	R: AT, BE, CH, DE, DK, ES, FR, GB, GR, IT, LI, LU, NL, SE, MC, PT, IE, FI, CY, TR				
	US 20030181742	A1	20030925	US 2003-363405	20030304
PRAI	JP 2000-273387		20000908		
	WO 2001-JP7639		20010904		
OS	MARPAT 136:247742				
GI					

\* STRUCTURE DIAGRAM TOO LARGE FOR DISPLAY - AVAILABLE VIA OFFLINE PRINT \*

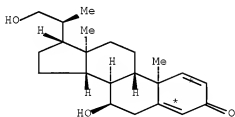
AB A process for the preparation of pregnane derivs. [I; R1 = H; R2 = protecting group; R3, R4 independently = alkyl, aryl, alkenyl, alkynyl; R3R4 = alkylene] which comprises reacting a compound II with an alkali metal or an alkaline earth metal in the presence of ammonia or an amine to obtain a compound III (R1 = H; R2 = H), protecting the hydroxyl groups of the compound III to obtain a compound III (R1 = protecting group; R2 = protecting group) protecting the compound III (R1 = protecting group; R2 = protecting group) at the 3-position to obtain a compound I (R1 = protecting group; R2 = protecting group; R3, R4 independently = alkyl, aryl, alkenyl, alkynyl; R3R4 = alkylene), and subjecting the compound I (R1 = protecting group; R2 = protecting group; R3, R4 independently = alkyl, aryl, alkenyl, alkynyl; R3R4 = alkylene) to solvolysis to obtain a compound I (R1 = H; R2 = protecting group; R3, R4 independently = alkyl, aryl, alkenyl, alkynyl; R3R4 = alkylene) and compound III (R1 = H; R2 = H). Thus, the title compound I (R1 = H; R2 = C6H5CO; R3R4 = CH2CH2) was prepared effectively from (20S)-7- $\alpha$ -hydroxy-3-oxo-pregna-1,4-diene-20-carboxaldehyde and C6H5COCl via hydrogenation and ethylene glycol and C6H5COCl O-protection and was useful as intermediate for squalamine preparation

ST pregnane prepn redn hydrogenation solvolysis  
 IT Hydrogenation  
 Reduction  
 Solvolysis

(process for the preparation of pregnane derivs.)  
 IT 5132-07-0 7681-52-9  
 RL: RGT (Reagent); RACT (Reactant or reagent)  
 (compound for comparison in process for the preparation of pregnane derivs.)  
 IT 122197-36-8  
 RL: RCT (Reactant); RACT (Reactant or reagent)  
 (process for the preparation of pregnane derivs.)  
 IT 208833-68-5P 296768-82-6P 403854-15-9P 403854-16-0P 403854-17-1P  
 RL: RCT (Reactant); SPN (Synthetic preparation); PREP (Preparation); RACT (Reactant or reagent)  
 (process for the preparation of pregnane derivs.)  
 IT 6192-52-5, p-Toluenesulfonic acid monohydrate  
 RL: RGT (Reagent); RACT (Reactant or reagent)  
 (process for the preparation of pregnane derivs.)  
 IT 208254-12-0P 301695-48-7P  
 RL: SPN (Synthetic preparation); PREP (Preparation)  
 (process for the preparation of pregnane derivs.)  
 IT 107-21-1, Ethylene glycol, reactions  
 RL: RCT (Reactant); RACT (Reactant or reagent)  
 (protecting process for the preparation of pregnane derivs.)  
 RE.CNT 12 THERE ARE 12 CITED REFERENCES AVAILABLE FOR THIS RECORD

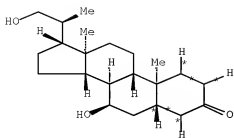
RE  
 (1) Anon; Bioorg Med Chem 2000, V8(8), P2059  
 (2) Anon; Chem Pharm Bull 1993, V41(4), P763  
 (3) Anon; Organic Letters 2000, V2(19), P2921  
 (4) Hoffmann La Roche F Und Co A G; EP 18515 A2 1980 CAPLUS  
 (5) Hoffmann La Roche F Und Co A G; US 4230625 A 1980 CAPLUS  
 (6) Hoffmann La Roche F Und Co A G; US 4301246 A 1980 CAPLUS  
 (7) Hoffmann La Roche F Und Co A G; JP 568399 A 1980  
 (8) Magainin Pharm Inc; JP 08507527 A 1994  
 (9) Magainin Pharm Inc; US 5637691 A 1994 CAPLUS  
 (10) Magainin Pharm Inc; EP 688333 A1 1994 CAPLUS  
 (11) Magainin Pharm Inc; WO 9420520 A1 1994 CAPLUS  
 (12) Magainin Pharm Inc; AU 9463974 A 1994 CAPLUS

RX(1) OF 35 ...A ==> B...



A

(1)  
 ➔



B  
YIELD 65%

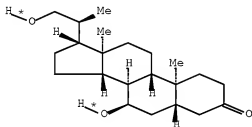
RX(1) RCT A 296768-82-6

STAGE(1)  
SOL 109-99-9 THF

STAGE(2)  
RGT C 7664-41-7 NH3, D 7439-93-2 Li  
SOL 7732-18-5 Water

PRO B 301695-48-7  
NTE -78°, under nitrogen

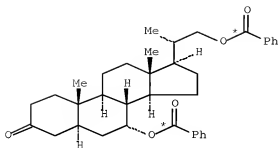
RX(2) OF 35 ...B + 2 G ==> H...



B



(2) ➡



<sup>H</sup>  
YIELD 90%

RX(2) RCT B 301695-48-7

STAGE(1)

RGT I 1122-58-3 4-DMAP, J 110-86-1 Pyridine

SOL 75-09-2 CH<sub>2</sub>Cl<sub>2</sub>

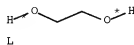
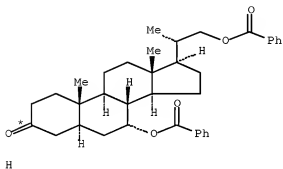
STAGE(2)

RCT G 98-88-4

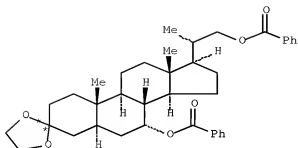
PRO H 403854-15-9

NTE 0°, under nitrogen in first step, room temp. for 12 h in second step

RX(3) OF 35 ...H + L ==> M...



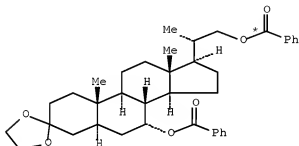
(3) →



M  
YIELD 97%

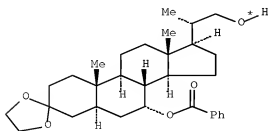
RX(3)      RCT   H 403854-15-9, L 107-21-1  
              RGT   N 104-15-4 TsOH  
              PRO   M 403854-16-0  
              SOL   108-88-3 PhMe  
              NTE   reflux, 2 h

RX(4) OF 35      ...M ==> P...



M

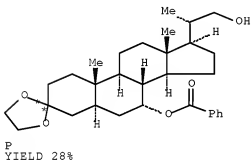
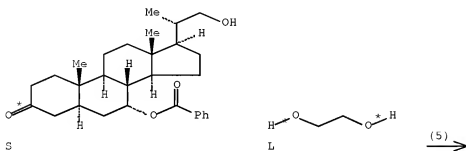
(4) →



P  
YIELD 86%

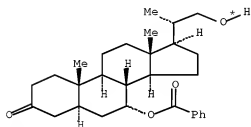
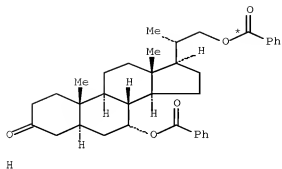
RX(4) RCT M 403854-16-0  
 RGT Q 1310-73-2 NaOH  
 PRO P 208833-68-5  
 SOL 67-56-1 MeOH, 109-99-9 THF  
 NTE room temp., 11 h

RX(5) OF 35 ...S + L ==> P...



RX(5) RCT S 403854-17-1, L 107-21-1  
 RGT T 6192-52-5 p-MeC6H4SO3H.H2O  
 PRO P 208833-68-5  
 SOL 108-88-3 PhMe  
 NTE reflux, 40 h

RX(6) OF 35 ...H ==> S...



<sup>S</sup>  
YIELD 69%

RX(6) RCT H 403854-15-9

STAGE(1)

SOL 109-99-9 THF

STAGE(2)

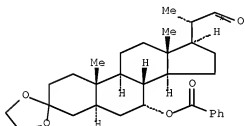
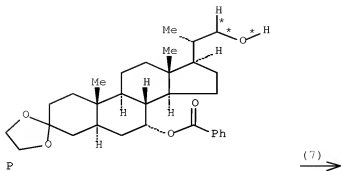
RGT U 497-19-8 Na<sub>2</sub>CO<sub>3</sub>, Q 1310-73-2 NaOH

SOL 7732-18-5 Water, 67-56-1 MeOH

PRO S 403854-17-1

NTE 40°, 4 h

RX(7) OF 35 ...P ==> V



V  
YIELD 79%

RX(7) RCT P 208833-68-5

STAGE(1)

RGT W 5132-07-0 Piperidine, 2,2,6,6-tetramethyl-, 1-oxide  
SOL 75-09-2 CH<sub>2</sub>Cl<sub>2</sub>

STAGE(2)

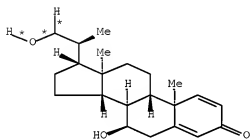
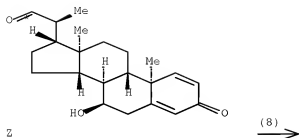
RGT X 7758-02-3 KBr  
SOL 7732-18-5 Water

STAGE(3)

RGT Y 7681-52-9 NaOCl, U 497-19-8 Na<sub>2</sub>CO<sub>3</sub>  
SOL 7732-18-5 Water

PRO V 208254-12-0  
NTE 0°, 2 h

RX(8) OF 35 Z ==> A...

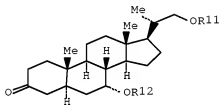


A  
YIELD 93%

RX (8)      RCT    Z 122197-36-8  
               RGT    AA 16940-66-2   NaBH<sub>4</sub>  
               PRO    A 296768-82-6  
               SOL    64-17-5   EtOH  
               NTE    0°

L8 ANSWER 1 OF 23 HCAPLUS COPYRIGHT 2009 ACS on STN  
 ACCESSION NUMBER: 2005:1196549 HCAPLUS Full-text  
 DOCUMENT NUMBER: 143:440617  
 TITLE: Preparation of 5-pregnanones as intermediates for squalamine  
 INVENTOR(S): Koyakumaru, Kenichi  
 PATENT ASSIGNEE(S): Kuraray Co., Ltd., Japan  
 SOURCE: Jpn. Kokai Tokkyo Koho, 16 pp.  
 CODEN: JKXXAF  
 DOCUMENT TYPE: Patent  
 LANGUAGE: Japanese  
 FAMILY ACC. NUM. COUNT: 1  
 PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
JP 2005314405	A	20051110	JP 2005-100945	20050331 <--
PRIORITY APPLN. INFO.: OTHER SOURCE(S):		MARPAT 143:440617	JP 2004-108460	A 20040331 <--
ED Entered STN: 10 Nov 2005				
GI				



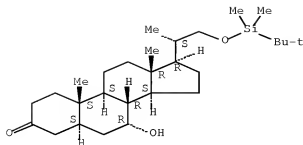
I

AB 5-Pregnanones I (R11, R12 = H, protecting group) are prepared by selective hydrogenation of C-C double bond of their corresponding 5-pregn-1-en-3-ones. Thus, (20S)-7 $\alpha$ ,21-dihydroxy-20-methyl-5 $\alpha$ -pregn-1-en-3-one was hydrogenated over Pd/C at 50° for 22 h in THF to give 95% (20S)-7 $\alpha$ ,21-dihydroxy-20-methyl-5 $\alpha$ -pregnan-3-one.

IT 303178-20-3P  
 RL: IMF (Industrial manufacture); RCT (Reactant); SPN (Synthetic preparation); PREP (Preparation); RACT (Reactant or reagent)  
 (preparation of pregnanones as intermediates for squalamine from pregnenones)

RN 303178-20-3 HCAPLUS  
 CN Pregnan-3-one, 21-[[[(1,1-dimethylethyl)dimethylsilyl]oxy]-7-hydroxy-20-methyl-, (5 $\alpha$ ,7 $\alpha$ ,20S)- (9CI) (CA INDEX NAME)

Absolute stereochemistry.



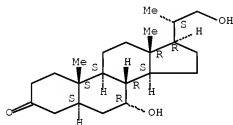
IT 301695-48-7P

RL: IMF (Industrial manufacture); SPN (Synthetic preparation); PREP (Preparation)  
(preparation of pregnanones as intermediates for squalamine from pregnenones)

RN 301695-48-7 HCAPLUS

CN Pregn-3-one, 7,21-dihydroxy-20-methyl-, (5α,7α,20S)- (9CI)  
(CA INDEX NAME)

Absolute stereochemistry.



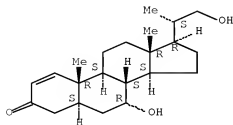
IT 866488-96-2P 866562-46-1P

RL: RCT (Reactant); SPN (Synthetic preparation); PREP (Preparation); RACT (Reactant or reagent)  
(preparation of pregnanones as intermediates for squalamine from pregnenones)

RN 866488-96-2 HCAPLUS

CN Pregn-1-en-3-one, 7,21-dihydroxy-20-methyl-, (5α,7α,20S)- (9CI) (CA INDEX NAME)

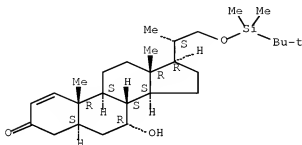
Absolute stereochemistry.



RN 866562-46-1 HCAPLUS

CN Pregn-1-en-3-one, 21-[[[(1,1-dimethylethyl)dimethylsilyl]oxy]-7-hydroxy-20-methyl-, (5a,7a,20S)- (9CI) (CA INDEX NAME)

Absolute stereochemistry.



L8 ANSWER 2 OF 23 HCAPLUS COPYRIGHT 2009 ACS on STN

ACCESSION NUMBER: 2005:1125857 HCAPLUS [Full-text](#)

DOCUMENT NUMBER: 143:387238

TITLE: Preparation of 5a-pregnane derivative as intermediate for squalamine

INVENTOR(S): Nakasawa, Makoto; Koyakumaru, Kenichi

PATENT ASSIGNEE(S): Kuraray Co., Ltd., Japan

SOURCE: Jpn. Kokai Tokkyo Koho, 11 pp.

CODEN: JKXXAF

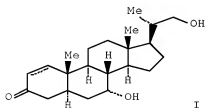
DOCUMENT TYPE: Patent

LANGUAGE: Japanese

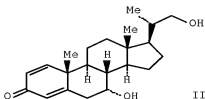
FAMILY ACC. NUM. COUNT: 1

PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
JP 2005289901	A	20051020	JP 2004-108416	20040331 <--
PRIORITY APPLN. INFO.:			JP 2004-108416	20040331 <--
ED Entered STN: 20 Oct 2005				
GI				



I



III

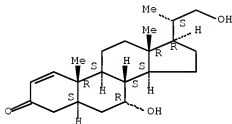
AB Title derivative I (the broken line is none: II) is prepared by treatment of pregnadienone derivative III with alkali metals or alkaline earth metals in the presence of amines and/or ammonia, followed by reduction of resulting mixture of I (the broken line is bond: IV) and II. Thus, hydrogenation of III with Li and ammonia at  $-40^{\circ}$  in THF gave II-IV mixture, which was hydrogenated over Pd/C to give II.

IT 866488-96-2P  
 RL: IMF (Industrial manufacture); RCT (Reactant); SPN (Synthetic preparation); PREP (Preparation); RACT (Reactant or reagent)  
 (preparation of 5 $\alpha$ -pregnane derivative as intermediate for squalamine from pregnadienone derivative)

RN 866488-96-2 HCAPLUS

CN Pregn-1-en-3-one, 7,21-dihydroxy-20-methyl-, (5 $\alpha$ ,7 $\alpha$ ,20S)- (9CI) (CA INDEX NAME)

Absolute stereochemistry.

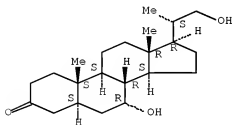


IT 301695-48-7P  
 RL: IMF (Industrial manufacture); SPN (Synthetic preparation); PREP (Preparation)  
 (preparation of 5 $\alpha$ -pregnane derivative as intermediate for squalamine from pregnadienone derivative)

RN 301695-48-7 HCAPLUS

CN Pregn-3-one, 7,21-dihydroxy-20-methyl-, (5 $\alpha$ ,7 $\alpha$ ,20S)- (9CI) (CA INDEX NAME)

Absolute stereochemistry.



L8 ANSWER 3 OF 23 HCAPLUS COPYRIGHT 2009 ACS on STN  
 ACCESSION NUMBER: 2005:1106865 HCAPLUS [Full-text](#)  
 DOCUMENT NUMBER: 143:387237  
 TITLE: Process for the preparation of 5 $\alpha$ -pregnane derivative via reduction of carbon-carbon double bond

Serial No.:10/594,163

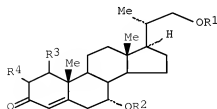
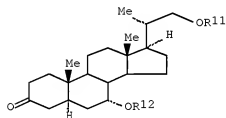
INVENTOR(S): in pregn-4-en-3-one compound  
Sugioka, Takashi; Ohzono, Shigeo; Koyakumaru, Kenichi;  
Nakagawa, Naoshi  
PATENT ASSIGNEE(S): Kuraray Co., Ltd., Japan  
SOURCE: PCT Int. Appl., 27 pp.  
CODEN: PIXXD2  
DOCUMENT TYPE: Patent  
LANGUAGE: Japanese  
FAMILY ACC. NUM. COUNT: 1  
PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
WO 2005095434	A1	20051013	WO 2005-JP6828	20050331 <--
W:	AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BW, BY, BZ, CA, CH, CN, CO, CR, CU, CZ, DE, DK, DM, DZ, EC, EE, EG, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, MZ, NA, NI, NO, NZ, OM, PG, PH, PL, PT, RO, RU, SC, SD, SE, SG, SK, SL, SM, SY, TJ, TM, TN, TR, TT, TZ, UA, UG, US, UZ, VC, VN, YU, ZA, ZM, ZW			
RW:	BW, GH, GM, KE, LS, MW, MZ, NA, SD, SL, SZ, TZ, UG, ZM, ZW, AM, AZ, BY, KG, KZ, MD, RU, TJ, TM, AT, BE, BG, CH, CY, CZ, DE, DK, EE, ES, FI, FR, GB, GR, HU, IE, IS, IT, LT, LU, MC, NL, PL, PT, RO, SE, SI, SK, TR, BF, BJ, CF, CG, CI, CM, GA, GN, GQ, GW, ML, MR, NE, SN, TD, TG			
EP 1743902	A1	20070117	EP 2005-728917	20050331 <--
R:	AT, BE, BG, CH, CY, CZ, DE, DK, EE, ES, FI, FR, GB, GR, HU, IE, IS, IT, LI, LT, LU, MC, NL, PL, PT, RO, SE, SI, SK, TR			
CN 1934124	A	20070321	CN 2005-80009530	20050331 <--
US 20070149494	A1	20070628	US 2006-594164	20060926 <--
IN 2006CN03994	A	20070706	IN 2006-CN3994	20061031 <--
PRIORITY APPLN. INFO.:			JP 2004-108419	A 20040331 <--
			WO 2005-JP6828	W 20050331 <--

OTHER SOURCE(S): MARPAT 143:387237

ED Entered SIN: 14 Oct 2005

GI



AB A process for the preparation of compound I [R11, R12 = H, protecting group of hydroxyl], characterized by reduction a pregnane derivative II [R1 = protecting group of hydroxy; R2 = H, protecting group of hydroxy; R3 and R4 represent hydrogen atoms or combine together to form a bond.] with alkali metals or alkaline earth metals in the presence of a proton donor, amine and/or ammonia, was disclosed. For example, to a solution of (20S)-21-tert-butylidimethylsilyloxy-7 $\alpha$ -hydroxy-20-methylpregn-4-en-3-one (5.00 g) and tert-butanol (1.78 g) in THF (100 mL) was added liquid ammonia (100 mL) at -50 °C. Then, Li metal (0.17 g) was added, while maintaining the reaction temperature between -50 and -40 °C, the reaction was stirred -40 °C for 3 h. The resulting reaction was treated with ammonium sulfate (1.59 g) followed by removal of ammonia, aqueous work-up and silica-gel purification to give (20S)-21-tert-butylidimethylsilyloxy-7 $\alpha$ -hydroxy-20-methyl-5 $\alpha$ -pregn-3-one in 96% yield. Of note compds. I are useful synthetic intermediates for the preparation of squalamine.

IT 301695-48-7P

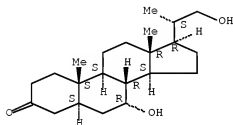
RL: SPN (Synthetic preparation); PREP (Preparation)

(preparation of (20S)-7 $\alpha$ ,21-dihydroxy-20-methyl-5 $\alpha$ -pregn-3-one via reduction and desilylation)

RN 301695-48-7 HCAPLUS

CN Pregnan-3-one, 7,21-dihydroxy-20-methyl-, (5 $\alpha$ ,7 $\alpha$ ,20S)- (9CI)  
(CA INDEX NAME)

Absolute stereochemistry.



IT 303178-20-3P

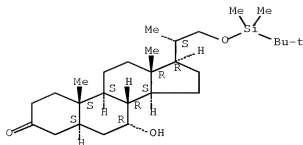
RL: RCT (Reactant); SPN (Synthetic preparation); PREP (Preparation); RACT (Reactant or reagent)

(preparation of 5 $\alpha$ -pregn-3-one compound from pregn-4-en-3-one via reduction using Li metal and ammonia)

RN 303178-20-3 HCAPLUS

CN Pregnan-3-one, 21-[(1,1-dimethylethyl)dimethylsilyl]oxy]-7-hydroxy-20-methyl-, (5 $\alpha$ ,7 $\alpha$ ,20S)- (9CI) (CA INDEX NAME)

Absolute stereochemistry.



REFERENCE COUNT: 6 THERE ARE 6 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L8 ANSWER 4 OF 23 HCAPLUS COPYRIGHT 2009 ACS on STN

ACCESSION NUMBER: 2005:1103799 HCAPLUS [Full-text](#)

DOCUMENT NUMBER: 143:387235

TITLE: Process for the preparation of 5 $\alpha$ -pregn-1-en-3-one derivative via reduction of carbon-carbon double bond in pregn-1,4-dien-3-one compound

INVENTOR(S): Koyakumaru, Kenichi

PATENT ASSIGNEE(S): Kuraray Co., Ltd., Japan

SOURCE: PCT Int. Appl., 31 pp.

CODEN: PIXXD2

DOCUMENT TYPE: Patent

LANGUAGE: Japanese

FAMILY ACC. NUM. COUNT: 1

PATENT INFORMATION:

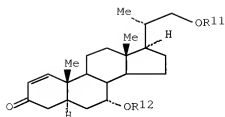
PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
WO 2005095433	A1	20051013	WO 2005-JP6824	20050331 <--
W:	AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BW, BY, BZ, CA, CH, CN, CO, CR, CU, CZ, DE, DK, DM, DZ, EC, EE, EG, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, MZ, NA, NI, NO, NZ, OM, PG, PH, PL, PT, RO, RU, SC, SD, SE, SG, SK, SL, SM, SY, TJ, TM, TN, TR, TT, TZ, UA, UG, US, UZ, VC, VN, YU, ZA, ZM, ZW			
RW:	BW, GH, GM, KE, LS, MW, MZ, NA, SD, SL, SZ, TZ, UG, ZM, ZW, AM, AZ, BY, KG, KZ, MD, RU, TJ, TM, AT, BE, BG, CH, CY, CZ, DE, DK, EE, ES, FI, FR, GB, GR, HU, IE, IS, IT, LT, LU, MC, NL, PL, PT, RO, SE, SI, SK, TR, BF, BJ, CF, CG, CI, CM, GA, GN, GQ, GW, ML, MR, NE, SN, TD, TG			

PRIORITY APPLN. INFO.: JP 2004-108451 A 20040331 <--

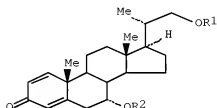
OTHER SOURCE(S): MARPAT 143:387235

ED Entered STN: 14 Oct 2005

GI



I



II

AB A process for the preparation of compds. I [R11, R12 = H, protecting group of hydroxy] from compds. II [R1 = protecting group of hydroxy; R2 = H, protecting group of hydroxy] using alkali metals or alkaline earth metals in the presence of a proton donor, amine and/or ammonia, was disclosed. For example, to a solution of (20S)-21-tert-butyltrimethylsilyloxy-7 $\alpha$ -hydroxy-20-methylpregn-1,4-dien-3-one (10.00 g) and tert-butanol (3.23 g) in THF (170 mL) was added liquid ammonia (170 mL) at -50 °C. Then, Li metal (0.32 g) was added, while maintaining reaction temperature between -50 to -40 °C, the reaction was stirred at -40 °C for 2 h. The resulting mixture was treated with ammonium acetate (1.17 g) followed by removal of ammonia, aqueous work-up and silica-gel purification to give (20S)-21-tert-butyltrimethylsilyloxy-7 $\alpha$ -hydroxy-20-methyl-5 $\alpha$ -pregn-1-en-3-one in 78% yield. Of note, compds. I are useful synthetic intermediates for the preparation of squalamine.

IT 866488-96-2P

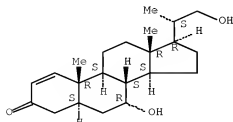
RL: RCT (Reactant); SPN (Synthetic preparation); PREP (Preparation); RACT (Reactant or reagent)

(desilylation of (20S)-21-tert-butyltrimethylsilyloxy-7 $\alpha$ -hydroxy-20-methylpregn-1-en-3-one)

RN 866488-96-2 HCAPLUS

CN Pregn-1-en-3-one, 7,21-dihydroxy-20-methyl-, (5 $\alpha$ ,7 $\alpha$ ,20S)-  
(9CI) (CA INDEX NAME)

Absolute stereochemistry.



IT 301695-48-7P

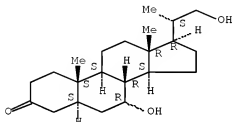
RL: SPN (Synthetic preparation); PREP (Preparation)

(preparation of (20S)-7 $\alpha$ ,21-dihydroxy-20-methyl-5 $\alpha$ -pregn-3-one via Pd/C catalyzed hydrogenation)

RN 301695-48-7 HCAPLUS

CN Pregnan-3-one, 7,21-dihydroxy-20-methyl-, (5 $\alpha$ ,7 $\alpha$ ,20S)- (9CI)  
(CA INDEX NAME)

Absolute stereochemistry.



IT 303178-20-3P

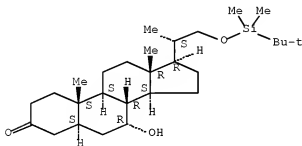
RL: RCT (Reactant); SPN (Synthetic preparation); PREP (Preparation); RACT (Reactant or reagent)

(preparation of 21-silyloxy-5 $\alpha$ -pregn-3-one compound from 21-silyloxy-5 $\alpha$ -pregn-1-en-3-one derivative via Pd/C catalyzed hydrogenation)

RN 303178-20-3 HCAPLUS

CN Pregnan-3-one, 21-[(1,1-dimethylethyl)dimethylsilyl]oxy]-7-hydroxy-20-methyl-, (5 $\alpha$ ,7 $\alpha$ ,20S)- (9CI) (CA INDEX NAME)

Absolute stereochemistry.



IT 866562-46-1P

RL: RCT (Reactant); SPN (Synthetic preparation); PREP (Preparation); RACT (Reactant or reagent)

(preparation of pregn-1-en-3-one derivs. from pregn-1,4-dien-3-one compound via reduction using Li metal and ammonia)

RN 866562-46-1 HCAPLUS

CN Pregn-1-en-3-one, 21-[(1,1-dimethylethyl)dimethylsilyl]oxy]-7-hydroxy-20-methyl-, (5 $\alpha$ ,7 $\alpha$ ,20S)- (9CI) (CA INDEX NAME)

Absolute stereochemistry.



\* STRUCTURE DIAGRAM TOO LARGE FOR DISPLAY - AVAILABLE VIA OFFLINE PRINT \*

AB Process for the preparation of compound I [R11, R12 = H, protecting group of hydroxy], characterized by selectively reducing a carbon-carbon double bond in a mixture of 5 $\alpha$ -pregnane derivs. II [R1, R2 = H, protecting group of hydroxy] and III [R1, R2 = same as above], was disclosed. For example, a mixture of (20S)-7 $\alpha$ ,21-dihydroxy-20-methyl-5 $\alpha$ -pregn-3-one (2.76 g) and (20S)-7 $\alpha$ ,21-dihydroxy-20-methyl-5 $\alpha$ -pregn-1-en-3-one (0.46 g) in THF was hydrogenated in the presence of 10% Pd/C (50 mg) under H<sub>2</sub> atmosphere at 50 °C for 5 h to give (20S)-7 $\alpha$ ,21-dihydroxy-20-methyl-5 $\alpha$ -pregn-3-one (3.06 g). Of note, compds. I are useful synthetic intermediates for the preparation of squalamine.

IT 866488-96-2P

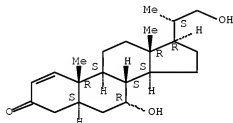
RL: RCT (Reactant); SPN (Synthetic preparation); PREP (Preparation); RACT (Reactant or reagent)

(desilylation of a mixture of (20S)-21-tert-butyldimethylsilyloxy-7 $\alpha$ -hydroxy-20-methyl-5 $\alpha$ -pregn-1-en-3-one and (20S)-21-tert-Butyldimethylsilyloxy-7 $\alpha$ -hydroxy-20-methyl-5 $\alpha$ -pregn-3-one)

RN 866488-96-2 HCAPLUS

CN Pregn-1-en-3-one, 7,21-dihydroxy-20-methyl-, (5 $\alpha$ ,7 $\alpha$ ,20S)- (9CI) (CA INDEX NAME)

Absolute stereochemistry.



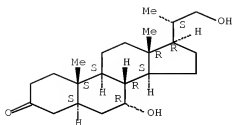
IT 301695-48-7P

RL: SPN (Synthetic preparation); PREP (Preparation)  
(preparation of (20S)-7 $\alpha$ ,21-dihydroxy-20-methyl-5 $\alpha$ -pregn-3-one via desilylation of silylated pregn-one derivs. or hydrogenation of pregnenone derivs.)

RN 301695-48-7 HCAPLUS

CN Pregnan-3-one, 7,21-dihydroxy-20-methyl-, (5 $\alpha$ ,7 $\alpha$ ,20S)- (9CI) (CA INDEX NAME)

Absolute stereochemistry.



IT 303178-20-3P

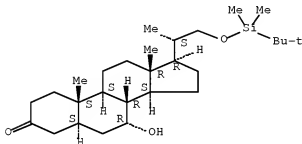
RL: RCT (Reactant); SPN (Synthetic preparation); PREP (Preparation); RACT (Reactant or reagent)

(reduction of (20S)-21-tert-butyldimethylsilyloxy-7α-hydroxy-20-methylpregn-1,4-dien-3-one using Li metal and ammonia)

RN 303178-20-3 HCAPLUS

CN Pregnan-3-one, 21-[(1,1-dimethylethyl)dimethylsilyloxy]-7-hydroxy-20-methyl-, (5α,7α,20S)- (9CI) (CA INDEX NAME)

Absolute stereochemistry.



IT 866562-46-1P

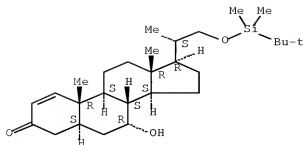
RL: RCT (Reactant); SPN (Synthetic preparation); PREP (Preparation); RACT (Reactant or reagent)

(reduction of (20S)-7α,21-dihydroxy-20-methylpregn-1,4-dien-3-one using Li metal and ammonia)

RN 866562-46-1 HCAPLUS

CN Pregn-1-en-3-one, 21-[(1,1-dimethylethyl)dimethylsilyloxy]-7-hydroxy-20-methyl-, (5α,7α,20S)- (9CI) (CA INDEX NAME)

Absolute stereochemistry.



REFERENCE COUNT: 10 THERE ARE 10 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L8 ANSWER 6 OF 23 HCAPLUS COPYRIGHT 2009 ACS on STN

ACCESSION NUMBER: 2005:1103797 HCAPLUS [Full-text](#)

DOCUMENT NUMBER: 143:387233

TITLE: Method for producing 5α-pregnane derivative

INVENTOR(S): Koyakumaru, Kenichi; Sugioka, Takashi; Ohzono, Shigeo; Nakagawa, Naoshi

PATENT ASSIGNEE(S): Kuraray Co., Ltd., Japan

SOURCE: PCT Int. Appl., 33 pp.

CODEN: PIXXD2

DOCUMENT TYPE: Patent

LANGUAGE: Japanese

FAMILY ACC. NUM. COUNT: 1

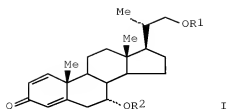
PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
WO 2005095431	A1	20051013	WO 2005-JP6818	20050331 <--
W:	AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BW, BY, BZ, CA, CH, CN, CO, CR, CU, CZ, DE, DK, DM, DZ, EC, EE, EG, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, MZ, NA, NI, NO, NZ, OM, PG, PH, PL, PT, RO, RU, SC, SD, SE, SG, SK, SL, SM, SY, TJ, TM, TN, TR, TT, TZ, UA, UG, US, UZ, VC, VN, YU, ZA, ZM, ZW			
RW:	BW, GH, GM, KE, LS, MW, MZ, NA, SD, SL, SZ, TZ, UG, ZM, ZW, AM, AZ, BY, KG, KZ, MD, RU, TJ, TM, AT, BE, BG, CH, CY, CZ, DE, DK, EE, ES, FI, FR, GB, GR, HU, IE, IS, IT, LT, LU, MC, NL, PL, PT, RO, SE, SI, SK, TR, BF, BJ, CF, CG, CI, CM, GA, GN, GQ, GW, ML, MR, NE, SN, TD, TG			
CN 1938330	A	20070328	CN 2005-80010110	20050331 <--
EP 1767540	A1	20070328	EP 2005-728889	20050331 <--
R:	AT, BE, BG, CH, CY, CZ, DE, DK, EE, ES, FI, FR, GB, GR, HU, IE, IS, IT, LI, LT, LU, MC, NL, PL, PT, RO, SE, SI, SK, TR			
US 20070197490	A1	20070823	US 2006-594163	20060926 <--
IN 2006CN03996	A	20070706	IN 2006-CN3996	20061031 <--
PRIORITY APPLN. INFO.:			JP 2004-108434	A 20040331 <--
			WO 2005-JP6818	W 20050331 <--

OTHER SOURCE(S): MARPAT 143:387233

ED Entered STN: 14 Oct 2005

GI



AB 5 $\alpha$ -Pregna-3-one derivs. and 5 $\alpha$ -pregna-1-en-3-one derivs. are prepared by reacting a pregnane derivative represented by the general formula I [R1 = OH-protecting group; R2 = H, OH-protecting group] with a metal selected from alkali metals and alkaline earth metals in the presence of a proton donor, an amine and/or ammonia. The title compds. are intermediates for squalamine. Thus, (20S)-21-tert-butyldimethylsilyloxy-7 $\alpha$ -hydroxy-20-methyl-5 $\alpha$ -pregna-3-one and (20S)-21-tert-butyldimethylsilyloxy-7 $\alpha$ -hydroxy-20-methyl-5 $\alpha$ -pregna-1-en-3-one were prepared by the title method.

IT 303178-20-3P 866562-46-1P

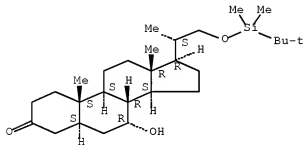
RL: RCT (Reactant); SPN (Synthetic preparation); PREP (Preparation); RACT (Reactant or reagent)

(method for producing 5 $\alpha$ -pregnane derivs. by reduction of methylpregna-1,4-dien-3-one derivs.)

RN 303178-20-3 HCAPLUS

CN Pregnan-3-one, 21-[(1,1-dimethylethyl)dimethylsilyl]oxy]-7-hydroxy-20-methyl-, (5 $\alpha$ ,7 $\alpha$ ,20S)- (9CI) (CA INDEX NAME)

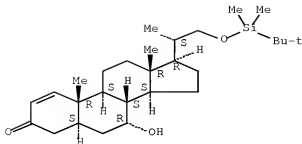
Absolute stereochemistry.



RN 866562-46-1 HCAPLUS

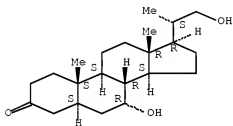
CN Pregn-1-en-3-one, 21-[(1,1-dimethylethyl)dimethylsilyl]oxy]-7-hydroxy-20-methyl-, (5 $\alpha$ ,7 $\alpha$ ,20S)- (9CI) (CA INDEX NAME)

Absolute stereochemistry.



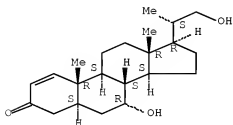
IT 301695-48-7P 866488-96-2P  
 RL: SPN (Synthetic preparation); PREP (Preparation)  
 (method for producing 5 $\alpha$ -pregnane derivs. by reduction of  
 methylpregna-1,4-dien-3-one derivs.)  
 RN 301695-48-7 HCAPLUS  
 CN Pregnan-3-one, 7,21-dihydroxy-20-methyl-, (5 $\alpha$ ,7 $\alpha$ ,20S)- (9CI)  
 (CA INDEX NAME)

Absolute stereochemistry.



RN 866488-96-2 HCAPLUS  
 CN Pregn-1-en-3-one, 7,21-dihydroxy-20-methyl-, (5 $\alpha$ ,7 $\alpha$ ,20S)-  
 (9CI) (CA INDEX NAME)

Absolute stereochemistry.



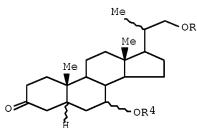
REFERENCE COUNT: 6 THERE ARE 6 CITED REFERENCES AVAILABLE FOR THIS  
 RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L8 ANSWER 7 OF 23 HCAPLUS COPYRIGHT 2009 ACS on STN

Serial No.:10/594,163

ACCESSION NUMBER: 2003:491250 HCAPLUS [Full-text](#)  
 DOCUMENT NUMBER: 139:69426  
 TITLE: Process for producing pregnane derivative  
 INVENTOR(S): Nakazawa, Makoto; Ohzono, Shigeo  
 PATENT ASSIGNEE(S): Kuraray Co., Ltd., Japan  
 SOURCE: PCT Int. Appl., 35 pp.  
 CODEN: PIXXD2  
 DOCUMENT TYPE: Patent  
 LANGUAGE: Japanese  
 FAMILY ACC. NUM. COUNT: 1  
 PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
WO 2003051904	A1	20030626	WO 2002-JP11547	20021106 <--
W: CA, CN, HU, IN, MX, US				
RW: AT, BE, BG, CH, CY, CZ, DE, DK, EE, ES, FI, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE, SK, TR				
JP 2003246790	A	20030902	JP 2002-322581	20021106 <--
PRIORITY APPLN. INFO.:			JP 2001-386808	A 20011219 <--
OTHER SOURCE(S): MARPAT 139:69426				
ED Entered STN: 27 Jun 2003				
GI				



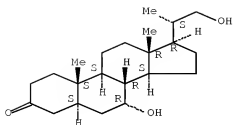
AB This document discloses a process for producing a 21-hydroxypregnane derivative represented by the general formula I [R = H; R4 represents a hydroxy-protecting group.] characterized by protecting the 7-position hydroxy group of a compound represented by the formula I [R = SiR1R2R3; R1, R2, and R3 each independently represents optionally substituted alkyl, alkenyl, alkynyl, aryl, or aralkyl; and R4 = H] and subsequently eliminating the 21-position protective silyl group. An intermediate for squalamine can be efficiently produced by the title process.

IT 301695-48-7P 303173-20-3P 550372-80-0P  
 RL: IMF (Industrial manufacture); RCT (Reactant); SPN (Synthetic preparation); PREP (Preparation); RACT (Reactant or reagent) (process for producing pregnane derivative)

RN 301695-48-7 HCAPLUS

CN Pregnan-3-one, 7,21-dihydroxy-20-methyl-, (5a,7a,20S)- (9CI)  
 (CA INDEX NAME)

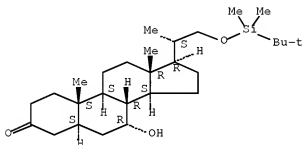
Absolute stereochemistry.



RN 303178-20-3 HCAPLUS

CN Pregnan-3-one, 21-[(1,1-dimethylethyl)dimethylsilyl]oxy]-7-hydroxy-20-methyl-, (5 $\alpha$ ,7 $\alpha$ ,20S)- (9CI) (CA INDEX NAME)

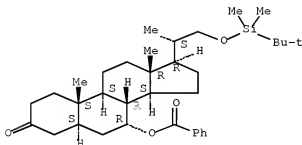
Absolute stereochemistry.



RN 550372-80-0 HCAPLUS

CN Pregnan-3-one, 7-(benzoyloxy)-21-[(1,1-dimethylethyl)dimethylsilyl]oxy]-20-methyl-, (5 $\alpha$ ,7 $\alpha$ ,21S)- (9CI) (CA INDEX NAME)

Absolute stereochemistry.



IT 403854-17-1P

RL: IMF (Industrial manufacture); SPN (Synthetic preparation); PREP (Preparation)

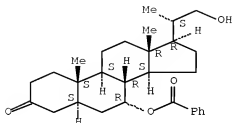
(process for producing pregnane derivative)

RN 403854-17-1 HCAPLUS

CN Pregnan-3-one, 7-(benzoyloxy)-21-hydroxy-20-methyl-,

(5a, 7a, 20S) - (9CI) (CA INDEX NAME)

Absolute stereochemistry.



REFERENCE COUNT: 3 THERE ARE 3 CITED REFERENCES AVAILABLE FOR THIS  
RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

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L8  ANSWER 8 OF 23  HCAPLUS  COPYRIGHT 2009 ACS on $TN
ACCESSION NUMBER:    2002:185147  HCAPLUS  Full-text
DOCUMENT NUMBER:     136:247742
TITLE:               Process for the preparation of pregnane derivatives
INVENTOR(S):         Nakazawa, Makoto
PATENT ASSIGNEE(S):  Kuraray Co., Ltd., Japan
SOURCE:              PCT Int. Appl., 52 pp.
                     CODEN: PIXXD2
DOCUMENT TYPE:       Patent
LANGUAGE:            Japanese
FAMILY ACC. NUM. COUNT: 1
PATENT INFORMATION:

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PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
WO 2002020552	A1	20020314	WO 2001-JP7639	20010904 <---
W: CA, CN, HU, IN, MX, US RW: AT, BE, CH, CY, DE, DK, ES, FI, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE, TR				
JP 2002201199	A	20020716	JP 2001-261586	20010830 <---
CA 2416850	A1	20030120	CA 2001-2416850	20010904 <---
EP 1325928	A	20030709	EP 2001-961343	20010904 <---
R: AT, BE, CH, DE, DK, ES, FR, GB, GR, IT, LI, LU, NL, SE, MC, PT, IE, FI, CY, TR				
US 20030181742	A1	20030925	US 2003-363405	20030304 <---
PRIORITY APPLN. INFO.:				
			JP 2000-273387	A 20000908 <---
			WO 2001-JP7639	W 20010904 <---
OTHER SOURCE(S): CASREACT 136:247742; MARPAT 136:247742				
ED Entered STN: 15 Mar 2002				
GI				

\* STRUCTURE DIAGRAM TOO LARGE FOR DISPLAY - AVAILABLE VIA OFFLINE PRINT \*

AB A process for the preparation of pregnane derivs. [I; R1 = H; R2 = protecting group; R3, R4 independently = alkyl, aryl, alkenyl, alkynyl; R3R4 = alkylene] which comprises reacting a compound II with an alkali metal or an alkaline earth metal in the presence of ammonia or an amine to obtain a compound III

(R1 = H; R2 = H), protecting the hydroxyl groups of the compound III to obtain a compound III (R1 = protecting group; R2 = protecting group) protecting the compound III (R1 = protecting group; R2 = protecting group) at the 3-position to obtain a compound I (R1 = protecting group; R2 = protecting group; R3, R4 independently = alkyl, aryl, alkenyl, alkynyl; R3R4 = alkylene), and subjecting the compound I (R1 = protecting group; R2 = protecting group; R3, R4 independently = alkyl, aryl, alkenyl, alkynyl; R3R4 = alkylene) to solvolysis to obtain a compound I (R1 = H; R2 = protecting group; R3, R4 independently = alkyl, aryl, alkenyl, alkynyl; R3R4 = alkylene) and compound III (R1 = H; R2 = H). Thus, the title compound I (R1 = H; R2 = C6H5CO; R3R4 = CH2CH2) was prepared effectively from (20S)-7- $\alpha$ -hydroxy-3-oxo-pregna-1,4-diene-20-carboxaldehyde and C6H5COCl via hydrogenation and ethylene glycol and C6H5COCl O-protection and was useful as intermediate for squalamine preparation

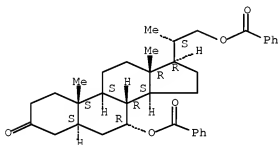
IT 403854-15-9P 403854-17-1P

RL: RCT (Reactant); SPN (Synthetic preparation); PREP (Preparation); RACT (Reactant or reagent)  
(process for the preparation of pregnane derivs.)

RN 403854-15-9 HCAPLUS

CN Pregnan-3-one, 7,21-bis(benzoyloxy)-20-methyl-, (5 $\alpha$ ,7 $\alpha$ ,20S)-(9CI) (CA INDEX NAME)

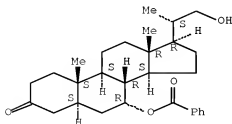
Absolute stereochemistry.



RN 403854-17-1 HCAPLUS

CN Pregnan-3-one, 7-(benzoyloxy)-21-hydroxy-20-methyl-, (5 $\alpha$ ,7 $\alpha$ ,20S)- (9CI) (CA INDEX NAME)

Absolute stereochemistry.



IT 301695-48-7P

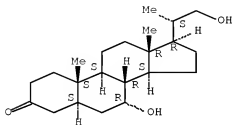
RL: SPN (Synthetic preparation); PREP (Preparation)

(process for the preparation of pregnane derivs.)

RN 301695-48-7 HCAPLUS

CN Pregnan-3-one, 7,21-dihydroxy-20-methyl-, (5 $\alpha$ ,7 $\alpha$ ,20S)- (9CI)  
(CA INDEX NAME)

Absolute stereochemistry.



REFERENCE COUNT: 12 THERE ARE 12 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L8 ANSWER 9 OF 23 HCAPLUS COPYRIGHT 2009 ACS on STN

ACCESSION NUMBER: 2001:872204 HCAPLUS [Full-text](#)

DOCUMENT NUMBER: 136:167554

TITLE: Synthesis and antimicrobial activity of new  
3 $\alpha$ -Hydroxy-23,24-bisnorcholane polyamine  
carbamatesAUTHOR(S): Kim, Hong-Seok; Kwon, Kyung-Chan; Kim, Ki Soo; Lee,  
Cheol HaeCORPORATE SOURCE: Department of Industrial Chemistry, Kyungpook National  
University, Taegu, 702-701, S. KoreaSOURCE: Bioorganic & Medicinal Chemistry Letters (2001  
, 11(23), 3065-3068

CODEN: BMCLE8; ISSN: 0960-894X

PUBLISHER: Elsevier Science Ltd.

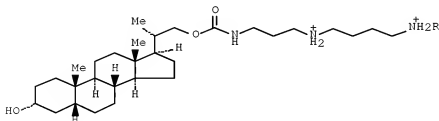
DOCUMENT TYPE: Journal

LANGUAGE: English

OTHER SOURCE(S): CASREACT 136:167554

ED Entered STN: 04 Dec 2001

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AB 3 $\alpha$ -Hydroxy-23,24-bisnorcholane spermidine and spermine carbamates, e.g. 1.2Cl-  
, have been synthesized and their antimicrobial and hemolytic activities were

evaluated. They exhibited excellent in vitro activities especially against methicillin-resistant *Staphylococcus aureus*.

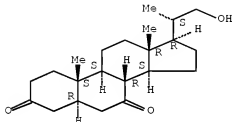
IT 398138-67-5 781657-55-4

RL: RCT (Reactant); RACT (Reactant or reagent)  
(preparation of bisnorcholane polyamine carbamates and antimicrobial activity against methicillin-resistant *Staphylococcus aureus*)

RN 398138-67-5 HCAPLUS

CN Pregnane-3,7-dione, 21-hydroxy-20-methyl-, (5 $\alpha$ ,20S)- (9CI) (CA INDEX NAME)

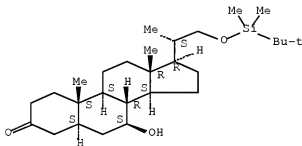
Absolute stereochemistry.



RN 781657-55-4 HCAPLUS

CN Pregnan-3-one, 21-[(1,1-dimethylethyl)dimethylsilyl]oxy]-7-hydroxy-20-methyl-, (5 $\alpha$ ,7 $\beta$ ,20S)- (9CI) (CA INDEX NAME)

Absolute stereochemistry.



REFERENCE COUNT: 23 THERE ARE 23 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L8 ANSWER 10 OF 23 HCAPLUS COPYRIGHT 2009 ACS on STN

ACCESSION NUMBER: 2001:780935 HCAPLUS [Full-text](#)

DOCUMENT NUMBER: 135:318612

TITLE: A process for the preparation of 7 $\alpha$ -hydroxy 3-aminosubstituted sterols using intermediates with an unprotected 7 $\alpha$ -hydroxy group

INVENTOR(S): Kinney, William A.; Zhang, Xuehai; Michalak, Ronald

PATENT ASSIGNEE(S): Genaera Corporation, USA

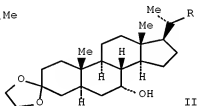
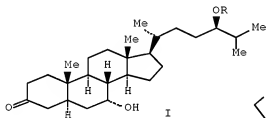
SOURCE: PCT Int. Appl., 39 pp.

CODEN: PIXXD2

DOCUMENT TYPE: Patent

LANGUAGE: English  
 FAMILY ACC. NUM. COUNT: 1  
 PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
WO 2001079255	A1	20011025	WO 2001-US12004	20010412 <--
W: AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BY, BZ, CA, CH, CN, CR, CU, CZ, DE, DK, DM, DZ, EE, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, MZ, NO, NZ, PL, PT, RO, RU, SD, SE, SG, SI, SK, SL, TJ, TM, TR, TT, TZ, UA, UG, US, UZ, VN, YU, ZA, ZW				
RW: GH, GM, KE, LS, MW, MZ, SD, SL, SZ, TZ, UG, ZW, AT, BE, CH, CY, DE, DK, ES, FI, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE, TR, BF, BJ, CF, CG, CI, CM, GA, GN, GW, ML, MR, NE, SN, TD, TG				
CA 2406847	A1	20011025	CA 2001-2406847	20010412 <--
EP 1274718	A1	20030115	EP 2001-926924	20010412 <--
EP 1274718	B1	20061018		
R: AT, BE, CH, DE, DK, ES, FR, GB, GR, IT, LI, LU, NL, SE, MC, PT, IE, SI, LT, LV, FI, RO, MK, CY, AL, TR				
JP 2003531148	T	20031021	JP 2001-576852	20010412 <--
AT 342912	T	20061115	AT 2001-926924	20010412 <--
AU 2001253427	B2	20070208	AU 2001-253427	20010412 <--
ES 2273831	T3	20070516	ES 2001-926924	20010412 <--
US 20030171576	A1	20030911	US 2002-268660	20021011 <--
US 6933383	B2	20050823		
US 20050187202	A1	20050825	US 2005-83961	20050321 <--
PRIORITY APPLN. INFO.:			US 2000-196646P	P 20000412 <--
			WO 2001-US12004	W 20010412 <--
			US 2002-268660	A3 20021011 <--
OTHER SOURCE(S): CASREACT 135:318612; MARPAT 135:318612				
ED Entered STN: 26 Oct 2001				
GI				



AB An efficient method for the synthesis of aminosterol compds. such as squalamine and compound 1436 is described. A method of the invention provides for regioselective oxidation and regioselective sulfonation of a fused ring system. The fused ring base can be, for example, a steroid ring base. The aminosterol compds. are effective as, among others, antibiotics, antiangiogenic agents and NHE3 inhibitors. Thus, squalamine and compound 1436 intermediate I (R = SO<sub>3</sub>H) was prepared by the regioselective oxidation of II (R = CH<sub>2</sub>OH) with NaOCl and TEMPO to give II (R = CHO), and regioselective sulfonation of I (R = H).

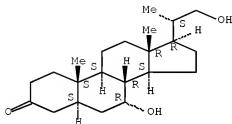
IT 301695-48-7P

RL: IMF (Industrial manufacture); RCT (Reactant); SPN (Synthetic preparation); PREP (Preparation); RACT (Reactant or reagent)  
(preparation of 7 $\alpha$ -hydroxy-3-amino-substituted steroids via regioselective oxidation and sulfonation)

RN 301695-48-7 HCAPLUS

CN Pregnan-3-one, 7,21-dihydroxy-20-methyl-, (5 $\alpha$ ,7 $\alpha$ ,20S)- (9CI)  
(CA INDEX NAME)

Absolute stereochemistry.



REFERENCE COUNT: 11 THERE ARE 11 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L8 ANSWER 11 OF 23 HCAPLUS COPYRIGHT 2009 ACS on STN

ACCESSION NUMBER: 2000:605979 HCAPLUS [Full-text](#)

DOCUMENT NUMBER: 133:310055

TITLE: A Short Formal Synthesis of Squalamine from a Microbial Metabolite

AUTHOR(S): Kinney, William A.; Zhang, Xuehai; Williams, Jon I.; Johnston, Sean; Michalak, Ronald S.; Deshpande, Milind; Dostal, Larry; Rosazza, John P. N.

CORPORATE SOURCE: Magainin Pharmaceuticals Inc., Plymouth Meeting, PA, 19462, USA

SOURCE: Organic Letters (2000), 2(19), 2921-2922

CODEN: ORLEF7; ISSN: 1523-7060

PUBLISHER: American Chemical Society

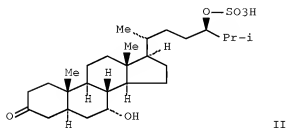
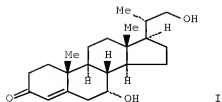
DOCUMENT TYPE: Journal

LANGUAGE: English

OTHER SOURCE(S): CASREACT 133:310055

ED Entered STN: 31 Aug 2000

GI



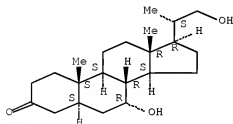
AB Formal synthesis of squalamine is described, utilizing the biotransformation product I, which is available in one step from com. available 3-keto-23,24-bisnorchol-4-en-22-ol. Regioselective C-22 oxidation and C-24 sulfation of the corresponding alcs. in the presence of a free C-7 alc. make for an efficient preparation of squalamine intermediate II.

IT 301695-48-7P  
 RL: RCT (Reactant); SPN (Synthetic preparation); PREP (Preparation); RACT (Reactant or reagent)  
 (formal synthesis of squalamine from a microbial metabolite)

RN 301695-48-7 HCAPLUS

CN Pregnan-3-one, 7,21-dihydroxy-20-methyl-, (5 $\alpha$ ,7 $\alpha$ ,20S)- (9CI)  
 (CA INDEX NAME)

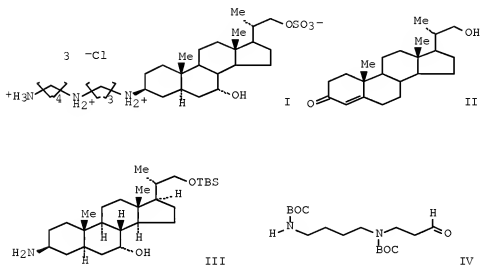
Absolute stereochemistry.



REFERENCE COUNT: 16 THERE ARE 16 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

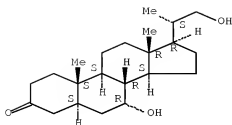
L8 ANSWER 12 OF 23 HCAPLUS COPYRIGHT 2009 ACS on STN  
 ACCESSION NUMBER: 2000:564499 HCAPLUS [Full-text](#)  
 DOCUMENT NUMBER: 133:335386  
 TITLE: Synthesis and antimicrobial activity of squalamine analogue  
 AUTHOR(S): Kim, H.-S.; Choi, B.-S.; Kwon, K.-C.; Lee, S.-O.;

CORPORATE SOURCE: Kwak, H. J.; Lee, C. H.  
 Department of Industrial Chemistry, Kyungpook National  
 University, Taegu, 702-701, S. Korea  
 SOURCE: Bioorganic & Medicinal Chemistry (2000),  
 8(8), 2059-2065  
 CODEN: BMECEP; ISSN: 0968-0896  
 PUBLISHER: Elsevier Science Ltd.  
 DOCUMENT TYPE: Journal  
 LANGUAGE: English  
 OTHER SOURCE(S): CASREACT 133:335386  
 ED Entered STN: 16 Aug 2000  
 GI



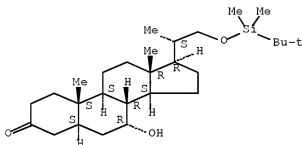
- AB Synthesis and antimicrobial activity of squalamine analog (I) are reported. The synthesis of I was accomplished from bisnoralc. (II). The spermidine moiety was introduced via reductive amination of an appropriately functionalized 3 $\beta$ -aminosterol (III) with spermidinyl aldehyde (IV) utilizing sodium triacetoxymethylborohydride as the reducing agent. I shows weaker antimicrobial activity than squalamine.
- IT 301695-48-7P 303178-20-3P  
 RL: RCT (Reactant); SPN (Synthetic preparation); PREP (Preparation); RACT (Reactant or reagent)  
 (preparation and antimicrobial activity of squalamine analog)
- RN 301695-48-7 HCAPLUS
- CN Pregnan-3-one, 7,21-dihydroxy-20-methyl-, (5 $\alpha$ ,7 $\alpha$ ,20S)- (9CI)  
 (CA INDEX NAME)

Absolute stereochemistry.



RN 303178-20-3 HCAPLUS  
 CN Pregnan-3-one, 21-[(1,1-dimethylethyl)dimethylsilyl]oxy]-7-hydroxy-20-methyl-, (5 $\alpha$ ,7 $\alpha$ ,20S)- (9CI) (CA INDEX NAME)

Absolute stereochemistry.



REFERENCE COUNT: 19 THERE ARE 19 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L8 ANSWER 13 OF 23 HCAPLUS COPYRIGHT 2009 ACS on STN

ACCESSION NUMBER: 1997:540987 HCAPLUS [Full-text](#)

DOCUMENT NUMBER: 127:229207

ORIGINAL REFERENCE NO.: 127:44531a,44534a

TITLE: Effect of side chain length on biotransformation, hepatic transport, and choleretic properties of chenodeoxycholyl homologs in the rodent: studies with dinorchenodeoxycholic acid, norchenodeoxycholic acid, and chenodeoxycholic acid

AUTHOR(S): Yeh, Hong-Zen; Schteingart, Claudio D.; Hagey, Lee R.; Ton-Nu, Huong-Thu; Bolder, Ulrich; Gavrilkina, Miriam A.; Steinbach, Joseph H.; Hofmann, Alan F.

CORPORATE SOURCE: div. Gastroenterol., Dep. Med., Univ. California San Diego, San Diego, CA, USA

SOURCE: Hepatology (Philadelphia) (1997), 26(2), 374-385

CODEN: HPTLD9; ISSN: 0270-9139

PUBLISHER: Saunders

DOCUMENT TYPE: Journal

LANGUAGE: English

ED Entered STN: 25 Aug 1997

AB To assess the effect of side chain length on the metabolism and physiol. effects of homologs of chenodeoxycholic acid (CDCA), dinorCDCA, the C22 homolog, was synthesized and its hepatic biotransformation, transport

kinetics, and choleric properties were defined in rat and hamster biliary fistula and in isolated perfused rat liver. Results were compared with those of norCDCA, the C23 homolog, and of CDCA, the natural C24 homolog. In the rat, dinorCDCA was secreted mostly in unconjugated form (the majority as dinor- $\alpha$ -muricholic acid); the remainder was glucuronidated. In the hamster, glucuronidation was greater, and the unconjugated fraction contained equal parts of dinor CDCA and 5 $\beta$ -hydroxy-dinorCDCA. NorCDCA was glucuronidated extensively (70%, rat; 40%, hamster). CDCA, in contrast, was efficiently amidated with taurine or glycine. In the perfused liver, the initial uptake rate of all three homologs was identical; later, regurgitation and/or cholehepatic shunting of dinor-CDCA and norCDCA, but not of CDCA, occurred. In rats and hamsters with biliary fistulas, dinorCDCA and norCDCA, but not CDCA, induced a bicarbonate-rich hypercholeresis of canalicular origin. Hypercholeresis was not induced by the taurine conjugate of dinorCDCA. Hepatobiliary retention of both dinorCDCA and norCDCA occurred, consistent with efficient ductular absorption (calculated to be 94%) and cholehepatic cycling of the unmetabolized bile acids. It is concluded that dinorCDCA, as norCDCA, is inefficiently amidated, is metabolized as a xenobiotic, and induces hypercholeresis. DinorCDCA is the first dihydroxy bile acid to be identified that is secreted largely in unconjugated form in bile.

IT 195205-20-0

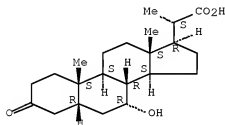
RL: BSU (Biological study, unclassified); MFM (Metabolic formation); BIOL (Biological study); FORM (Formation, nonpreparative)

(effect of side chain length on biotransformation and hepatic transport and choleric properties of chenodeoxycholy homologs in rodent in relation to lipophilicity)

RN 195205-20-0 HCAPLUS

CN Pregnane-20-carboxylic acid, 7-hydroxy-3-oxo-, (5 $\beta$ ,7 $\alpha$ )- (9CI)  
(CA INDEX NAME)

Absolute stereochemistry.



REFERENCE COUNT: 54 THERE ARE 54 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L8 ANSWER 14 OF 23 HCAPLUS COPYRIGHT 2009 ACS on STN

ACCESSION NUMBER: 1991:602975 HCAPLUS [Full-text](#)

DOCUMENT NUMBER: 115:202975

ORIGINAL REFERENCE NO.: 115:34541a,34544a

TITLE: Bioconversion of triterpenes by mycobacteria.  
Structure and conformation of the products of  
degradation of 7,11-dioxodihydrolanosterol by  
Mycobacterium phlei

AUTHOR(S): Jabbouri, Said; Chosson, Patricia; Tisnes, Pierre;  
Rao, Renee; Servin, Philippe; Prome, Jean Claude  
CORPORATE SOURCE: Cent. Rech. Biochim. Genet. Cell., CNRS, Toulouse,  
31062, Fr.

SOURCE: Journal of the Chemical Society, Perkin Transactions  
1: Organic and Bio-Organic Chemistry (1972-1999) (1991), (8), 1935-40  
CODEN: JCPRB4; ISSN: 0300-922X

DOCUMENT TYPE: Journal  
LANGUAGE: English

ED Entered STN: 15 Nov 1991

AB Although mycobacteria are unable to degrade lanosterol and dihydrolanosterol, principal components of wool fat, the transformation of some of their autoxidn. products by *M. phlei* was observed. By analogy with the mechanism of cholesterol degradation, this difference was assumed to be due to the requirement for the presence of an enone group before the side-chain can be degraded. This paper reports the spectroscopic determination of the structure of the major metabolites of 7,11-dioxodihydrolanosterol. The side-chain is degraded from 8 carbon atoms to 3, the terminal carbon atom being oxidized to a primary alc. or a Me ester. The tetracyclic skeleton can undergo regioselective oxidation-reduction modifications at the 3- and 7-position. Their conformational anal., carried out by 2D-NMR methods, indicates a chair form for ring A of 3 $\beta$ -hydroxy derivs., while it is highly deformed for 3-keto compds. as predicted formerly by D. A. Dougherty, et al. (1979) for this lanostane series.

IT 136842-50-7 136842-51-8 136842-53-0

136842-54-1

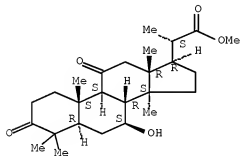
RL: BIOL (Biological study)

(formation and conformation and structure of, of *Mycobacterium phlei*, as dioxodihydrolanosterol degradation product)

RN 136842-50-7 HCAPLUS

CN Pregnane-20-carboxylic acid, 7-hydroxy-4,4,14-trimethyl-3,11-dioxo-, methyl ester, (5 $\alpha$ ,7 $\beta$ ,20S)- (9CI) (CA INDEX NAME)

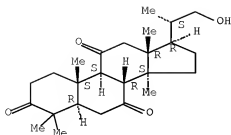
Absolute stereochemistry.



RN 136842-51-8 HCAPLUS

CN Pregnane-3,7,11-trione, 21-hydroxy-4,4,14,20-tetramethyl-, (5 $\alpha$ ,20S)- (9CI) (CA INDEX NAME)

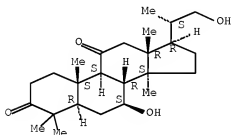
Absolute stereochemistry.



RN 136842-53-0 HCAPLUS

CN Pregnane-3,11-dione, 7,21-dihydroxy-4,4,14,20-tetramethyl-, (5 $\alpha$ ,7 $\beta$ ,20S)- (9CI) (CA INDEX NAME)

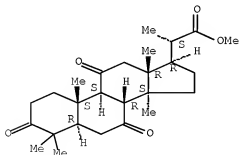
Absolute stereochemistry.



RN 136842-54-1 HCAPLUS

CN Pregnane-20-carboxylic acid, 4,4,14-trimethyl-3,7,11-trioxo-, methyl ester, (5 $\alpha$ ,20S)- (9CI) (CA INDEX NAME)

Absolute stereochemistry.



L8 ANSWER 15 OF 23 HCAPLUS COPYRIGHT 2009 ACS on STN

ACCESSION NUMBER: 1981:407603 HCAPLUS [Full-text](#)

DOCUMENT NUMBER: 95:7603

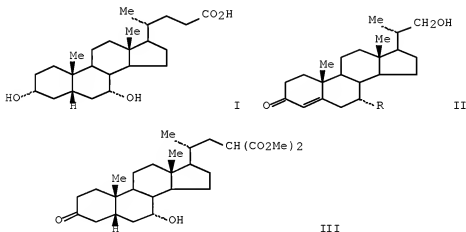
ORIGINAL REFERENCE NO.: 95:1447a,1450a

TITLE: Chenodeoxycholic acid and intermediate products

Serial No.:10/594,163

INVENTOR(S): Despreaux, Carl; Narwid, Thomas Albert; Palleroni, Norberto J.; Uskokovic, Milan R.  
 PATENT ASSIGNEE(S): Hoffmann-La Roche, F., und Co. A.-G., Switz.  
 SOURCE: Eur. Pat. Appl., 37 pp.  
 CODEN: EPXXDW  
 DOCUMENT TYPE: Patent  
 LANGUAGE: German  
 FAMILY ACC. NUM. COUNT: 1  
 PATENT INFORMATION:

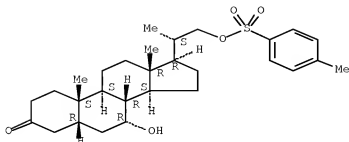
PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
EP 18515	A2	19801112	EP 1980-101893	19800409 <--
EP 18515	A3	19810107		
EP 18515	B1	19821027		
R: AT, BE, CH, DE, FR, GB, IT, NL				
US 4230625	A	19801028	US 1979-29420	19790412 <--
US 4301246	A	19811117	US 1980-113019	19800118 <--
AT 1710	T	19821115	AT 1980-101893	19800409 <--
JP 56008399	A	19810128	JP 1980-47936	19800411 <--
PRIORITY APPLN. INFO.:			US 1979-29420	A 19790412 <--
			EP 1980-101893	A 19800409 <--
OTHER SOURCE(S):			CASREACT 95:7603; MARPAT 95:7603	
ED Entered STN: 12 May 1984				
GI				



AB Chenodeoxycholic acid (I) was prepared from oxodinorcholenoic acid II (R = H).  
 Thus, fermentation of II (R = H) with Botryodiplodia theobromae gave II (R = OH), which underwent consecutive hydrogenation, tosylation, and substitution reaction with CH<sub>2</sub>(CO<sub>2</sub>Me)<sub>2</sub> to give norcholanedecarboxylate III. NaBH<sub>4</sub> reduction of III and subsequent saponification-decarboxylation gave I.  
 IT 77530-53-1P  
 RL: SPN (Synthetic preparation); PREP (Preparation)  
 (preparation and substitution reaction with di-Me malonate)  
 RN 77530-53-1 HCAPLUS  
 CN Pregnan-3-one, 7-hydroxy-20-methyl-21-[(4-methylphenyl)sulfonyloxy]-,

(5 $\beta$ , 7 $\alpha$ , 20S)- (9CI) (CA INDEX NAME)

Absolute stereochemistry.



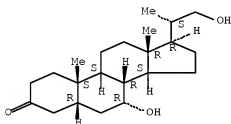
IT 77530-52-0P

RL: RCT (Reactant); SPN (Synthetic preparation); PREP (Preparation); RACT  
(Reactant or reagent)  
(preparation and tosylation of)

RN 77530-52-0 HCAPLUS

CN Pregnan-3-one, 7,21-dihydroxy-20-methyl-, (5 $\beta$ , 7 $\alpha$ , 20S)- (9CI)  
(CA INDEX NAME)

Absolute stereochemistry.



L8 ANSWER 16 OF 23 HCAPLUS COPYRIGHT 2009 ACS on STN

ACCESSION NUMBER: 1964:61153 HCAPLUS [Full-text](#)

DOCUMENT NUMBER: 60:61153

ORIGINAL REFERENCE NO.: 60:10750g-h

TITLE: Helvolic acid

AUTHOR(S): Okuda, Shigenobu; Iwasaki, Shigeo; Tsuda, Kyosuke;  
Sano, Yoshimoto; Hata, Toju; Udagawa, Shunichi;  
Nakayama, Yuya; Yamaguchi, Hiroshi

CORPORATE SOURCE: Univ. Tokyo

SOURCE: Chemical & Pharmaceutical Bulletin (1964),  
12(1), 121-4

CODEN: CPBTAL; ISSN: 0009-2363

DOCUMENT TYPE: Journal

LANGUAGE: Unavailable

ED Entered STN: 22 Apr 2001

GI For diagram(s), see printed CA Issue.

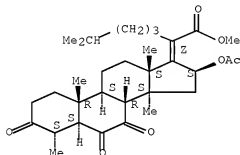
AB I was proposed as a partial structure for helvolic acid on the basis of chemical and spectral evidence. It was suggested that the remaining Me group was probably at C-14.

IT 107277-22-5, 29-Nordammar-17(20)-en-21-oic acid, 16 $\beta$ -hydroxy-3,6,7-trioxo(?), methyl ester, acetate (preparation of)

RN 107277-22-5 HCAPLUS

CN 29-Nordammar-17(20)-en-21-oic acid, 16 $\beta$ -hydroxy-3,6,7-trioxo-, methyl ester, acetate (7CI) (CA INDEX NAME)

Absolute stereochemistry.  
Double bond geometry as shown.



L8 ANSWER 17 OF 23 HCAPLUS COPYRIGHT 2009 ACS on STN

ACCESSION NUMBER: 1961:9147 HCAPLUS [Full-text](#)

DOCUMENT NUMBER: 55:9147

ORIGINAL REFERENCE NO.: 55:1845a-c

TITLE: Storage iron in the animal body. I. Alterations in storage iron following experimental bleeding, liver damage, and iron administration

AUTHOR(S): Yoshioka, Yuzo

CORPORATE SOURCE: Univ. Hiroshima Med. School

SOURCE: Hiroshima Igaku (1959), 10, 2565-74

CODEN: HIRGAY; ISSN: 0367-5904

DOCUMENT TYPE: Journal

LANGUAGE: Unavailable

ED Entered STN: 22 Apr 2001

AB The changes in storage Fe in various organs of rabbits were studied under different conditions. In normal rabbits the ferritin (I) and hemosiderin (II) concns. were in the following order: spleen, liver, bone marrow, and kidney. The II content was higher than that of I in the liver, kidney, and bone marrow, while the reverse relation was observed in the spleen. Hemorrhagic anemia resulted in a marked decrease in storage Fe to a greater extent in spleen than in the liver, kidney, and bone marrow. In this case the predominant reduction was in I in the liver, spleen, and kidney, while II was more markedly reduced in the bone marrow. During the recovery phase after hemorrhage, a marked increase in liver II and a progressive decrease in I of all organs were observed. Recovery from the anemic state was much disturbed by the induction of liver damage, where a marked reduction of I and II occurred in the liver and spleen, and a slight decrease of I and a slight increase of II were seen in the kidney and bone marrow. Acceleration of recovery by Fe administration was accompanied by a marked increase in I and II in all organs. The increase was greatest in the liver.

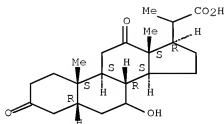
IT 111663-25-3

(Derived from data in the 6th Collective Formula Index (1957-1961))

RN 111663-25-3 HCAPLUS

CN 5 $\beta$ -Pregnane-20-carboxylic acid, 7-hydroxy-3,12-dioxo- (6CI) (CA  
INDEX NAME)

Absolute stereochemistry.



L8 ANSWER 18 OF 23 HCAPLUS COPYRIGHT 2009 ACS on STN

ACCESSION NUMBER: 1961:9146 HCAPLUS [Full-text](#)

DOCUMENT NUMBER: 55:9146

ORIGINAL REFERENCE NO.: 55:1844i,1845a

TITLE: The metabolism of bile acids. The metabolism of cholic acid and dehydrocholic acid by microorganisms  
Hoshita, Takahiko; Shimizu, Yoshimasa; Matsumura, ShinzoAUTHOR(S): Univ. Hiroshima Med. School  
CORPORATE SOURCE: Hiroshima Igaku (1959), 10, 475-9  
SOURCE: CODEN: HIRGAY; ISSN: 0367-5904DOCUMENT TYPE: Journal  
LANGUAGE: Unavailable

ED Entered STN: 22 Apr 2001

AB Cholate, when incubated with minced cat intestine, was metabolized to deoxycholate, while dehydrocholate was metabolized to 3,12-dioxo-7-hydroxybisnorcholanate.

IT 111663-25-3P, 5 $\beta$ -Pregnane-20-carboxylic acid,

7-hydroxy-3,12-dioxo-

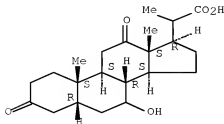
RL: PREP (Preparation)

(formation in dehydrocholic acid metabolism by intestinal bacteria)

RN 111663-25-3 HCAPLUS

CN 5 $\beta$ -Pregnane-20-carboxylic acid, 7-hydroxy-3,12-dioxo- (6CI) (CA  
INDEX NAME)

Absolute stereochemistry.



L8 ANSWER 19 OF 23 HCAPLUS COPYRIGHT 2009 ACS on STN

ACCESSION NUMBER: 1961:8771 HCAPLUS Full-text

DOCUMENT NUMBER: 55:8771

ORIGINAL REFERENCE NO.: 55:1785c-d

TITLE: Metabolism of cholic acid,  
3 $\alpha$ ,12 $\alpha$ -dihydroxy-7-oxocholanic acid, and  
dehydrocholic acid by microorganisms

AUTHOR(S): Shimizu, Yoshimasa

CORPORATE SOURCE: Univ. Hiroshima Med. School

SOURCE: Hiroshima Igaku (1958), 9, 2243-50

CODEN: HIRGAY; ISSN: 0367-5904

DOCUMENT TYPE: Journal

LANGUAGE: Unavailable

ED Entered STN: 22 Apr 2001

AB The incubation of cholic acid with fresh dog intestinal homogenates gave rise to 3 $\alpha$ ,12 $\alpha$ -dihydroxy-7-oxocholanic acid which was further metabolized to deoxycholic acid by one pathway and to dehydrobisanorchoic acid through dehydrocholic acid by another.

IT 102958-05-4P, 5 $\beta$ -Pregnane-20-carboxylic acid, 3,7,12-trioxo-

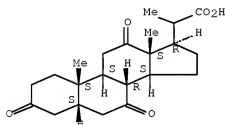
RL: PREP (Preparation)

(formation in cholic acid metabolism by intestinal microorganisms)

RN 102958-05-4 HCAPLUS

CN 5 $\beta$ -Pregnane-20-carboxylic acid, 3,7,12-trioxo- (6CI) (CA INDEX NAME)

Absolute stereochemistry.



L8 ANSWER 20 OF 23 HCAPLUS COPYRIGHT 2009 ACS on STN

ACCESSION NUMBER: 1961:8769 HCAPLUS Full-text

DOCUMENT NUMBER: 55:8769

ORIGINAL REFERENCE NO.: 55:1785a

TITLE: Metabolism of bile acids [by *Aspergillus clavatus*]

AUTHOR(S): Kameo, Hitoshi

CORPORATE SOURCE: Univ. Hiroshima Med. School

SOURCE: Hiroshima Igaku (1958), 9, 1541-3

DOCUMENT TYPE: Journal

LANGUAGE: Unavailable

ED Entered STN: 22 Apr 2001

AB Dehydrocholate was metabolized to  $\beta$ -reductodehydrocholate and dehydrobisanorchole by *A. clavatus* in a modified Czapek medium.

IT 102958-05-4P, 5 $\beta$ -Pregnane-20-carboxylic acid, 3,7,12-trioxo-

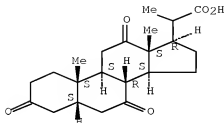
RL: PREP (Preparation)

(formation from dehydrocholic acid by *Aspergillus clavatus*)

RN 102958-05-4 HCAPLUS

CN 5 $\beta$ -Pregnane-20-carboxylic acid, 3,7,12-trioxo- (6CI) (CA INDEX NAME)

Absolute stereochemistry.



L8 ANSWER 21 OF 23 HCAPLUS COPYRIGHT 2009 ACS on STN

ACCESSION NUMBER: 1956:1645 HCAPLUS [Full-text](#)

DOCUMENT NUMBER: 50:1645

ORIGINAL REFERENCE NO.: 50:388e-g

TITLE: Microbiological degradation of bile acid. III. Partial synthesis of methyl 7 $\alpha$ -acetoxy-3,12-dioxobisnorcholanate from cholic acid

AUTHOR(S): Hayakawa, Shohei

CORPORATE SOURCE: Okayama Univ. Med. School

SOURCE: Proceedings of the Japan Academy (1954), 30, 139-42

CODEN: PJACAW; ISSN: 0021-4280

DOCUMENT TYPE: Journal

LANGUAGE: English

ED Entered STN: 22 Apr 2001

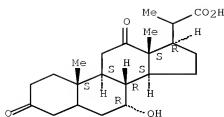
AB Me 3 $\alpha$ ,7 $\alpha$ -diacetoxy-12 $\alpha$ -hydroxybischolanate (III), prepared from Me bisnorcholate by treatment with pyridine-Ac<sub>2</sub>O in benzene, m. 180-2° (sintering at 110°). III was converted to Me 7 $\alpha$ -acetoxy-3 $\alpha$ ,12 $\alpha$ -dihydroxybisnorcholanate (IV), m. 142°, by treatment with HCl in MeOH at 25-30°, followed by dilution with H<sub>2</sub>O, and recrystn. of the solids from benzene-petr. ether. IV with CrO<sub>3</sub> in AcOH yielded Me 7 $\alpha$ -acetoxy-3,12-dioxobisnorcholanate, m. 214-16°, giving a pos. Jaffe test, also prepared from the hydrogenated Me ester of I and Ac<sub>2</sub>O. 7 $\alpha$ -Hydroxy-3,12-dioxobisnorcholanate, prepared from I by hydrogenation over Pd in EtOH, m. 249-52° and gave a positive Jaffe test; Me ester, prepared with CH<sub>2</sub>N<sub>2</sub> in Et<sub>2</sub>O, m. 162-4° (sintering at 157°) (from EtOAc-petr. ether, then C<sub>6</sub>H<sub>6</sub>-petr. ether).

IT 911672-84-9, 20-Pregnanecarboxylic acid, 7 $\alpha$ -hydroxy-3,12-dioxo- (and esters)

RN 911672-84-9 HCAPLUS

CN 20-Pregnanecarboxylic acid, 7 $\alpha$ -hydroxy-3,12-dioxo- (5CI) (CA INDEX NAME)

Absolute stereochemistry.



L8 ANSWER 22 OF 23 HCAPLUS COPYRIGHT 2009 ACS on STN

ACCESSION NUMBER: 1956:1644 HCAPLUS Full-text

DOCUMENT NUMBER: 50:1644

ORIGINAL REFERENCE NO.: 50:388b-e

TITLE: Microbiological degradation of bile acid. II.

Formation of 7-hydroxy-3,12-dioxobisnor-4,9(11)-

choladienic acid from cholic acid by Actinomyces

Hayakawa, Shohei

AUTHOR(S): Okayama Univ. Med. School

CORPORATE SOURCE: Proceedings of the Japan Academy (1954), 30,

133-8

CODEN: PJACAW; ISSN: 0021-4280

DOCUMENT TYPE: Journal

LANGUAGE: English

ED Entered STN: 22 Apr 2001

AB Cholic acid-containing media (see above) (20 l.) fermented by Actinomyces number 1164 was concentrated (after filtration to remove the microbial cells), the concentrate acidified with HCl, and chilled. After 20 hrs. at 0°, crystals were observed. These were recrystd. from MeOH (yield of 4 g. from 60 g. of cholic acid added to medium), and the dioxime, prepared from the Me ester of this acid (see previous paper), analyzed 5.97% N (oxime of 7-hydroxy-3,12-dioxobisnor-4,9(11)-choladienate analyzed 5.95% N). Hydrogenation of the Me ester gave needles (m. 166-9°) which gave a pos. Jaffe test and neg. Shimizu-Mizuhara test, and was tentatively identified as Me 7-hydroxy-3,12-dioxobisnorcholatanate (II). The dioxime of II was prepared and m: 232-4°, N content, 6.53%. Me dehydrobisnorcholatanate, prepared from II by treatment with CrO<sub>3</sub>, m. 197-9°, identical with that of a synthetic sample; trioxime, m. 267-9°, N content, 9.57%, values similar to those obtained with synthetic materials. The ultraviolet spectra of the parent compound showed an absorption maximum at 240.3 mμ ( $\epsilon$  = 11.15 + 104), and of the Me ester, 242.1 mμ ( $\epsilon$  = 11.98 + 104). The data collected support the view that I is 7-hydroxy-3,12-dioxobisnor-4,9(11)-choladienic acid.

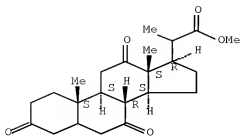
IT 881385-35-9P, 20-Pregnanecarboxylic acid, 3,7,12-trioxo-, methyl ester 911495-03-9P, 20-Pregnanecarboxylic acid, 7-hydroxy-3,12-dioxo-, methyl ester

RL: PREP (Preparation)  
(preparation of)

RN 881385-35-9 HCAPLUS

CN 20-Pregnanecarboxylic acid, 3,7,12-trioxo-, methyl ester (5CI) (CA INDEX NAME)

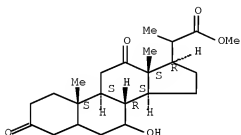
Relative stereochemistry.



RN 911495-03-9 HCAPLUS

CN 20-Pregnanecarboxylic acid, 7-hydroxy-3,12-dioxo-, methyl ester (5CI) (CA INDEX NAME)

Absolute stereochemistry.



L8 ANSWER 23 OF 23 HCAPLUS COPYRIGHT 2009 ACS on STN

ACCESSION NUMBER: 1956:1643 HCAPLUS [Full-text](#)

DOCUMENT NUMBER: 50:1643

ORIGINAL REFERENCE NO.: 50:387h-i,388a-c

TITLE: Microbiological degradation of bile acid. I. On  
β-oxidation and unsaturation of cholic acid by  
Actinomyces

AUTHOR(S): Hayakawa, Shohei

CORPORATE SOURCE: Okayama Univ. Med. School

SOURCE: Proceedings of the Japan Academy (1954), 30,  
128-32

CODEN: PJACAW; ISSN: 0021-4280

DOCUMENT TYPE: Journal

LANGUAGE: English

ED Entered STN: 22 Apr 2001

AB When Actinomyces number 1164 (Okayama Tobacco Laboratory, Japan Monopoly Bureau) was grown for 14 days (incubation temperature 30°) on a medium containing 6 g. cholic acid, 2 g. (NH<sub>4</sub>)<sub>2</sub>SO<sub>4</sub>, 2 g. K<sub>2</sub>HPO<sub>4</sub>, 1 g. MgSO<sub>4</sub>·7H<sub>2</sub>O, 0.02 g. FeCl<sub>3</sub>·6H<sub>2</sub>O, and 2 l. H<sub>2</sub>O (pH adjusted to 7.2 with NaOH) in culture without agitation (100 ml. medium/500 ml. conical flask) the pH dropped to 5.8, a neg. Pettenkofer test was obtained, and no precipitate was observed when the pH was lowered with HCl. The cell-free liquid was concentrated (at pH 7.2) in vacuo to about 0.1 volume, and 2 substances crystallized. An acid (I), m. 280-2° (decomposition), gave neg. results to the Hammarsten-Yamasaki, the Mylius, and Shimizu-Mizuhara tests. A yellow Liebermann test was obtained, while pos. Jaffe and Zimmermann tests were obtained only after 5

min. I was slightly soluble in H<sub>2</sub>O, MeOH, EtOH, and acetone, and insol. in Et<sub>2</sub>O, petr. ether, and benzene. Mol. weight from titration was 377.25; analysis for C<sub>22</sub>H<sub>28</sub>O<sub>5</sub>: C, 70.9; H, 7.58; found, C, 70.1; H, 8.01. The Me ester, prepared by treatment with CH<sub>2</sub>N<sub>2</sub> in Et<sub>2</sub>O, m. 237° (sintering) (from MeOH). I was hydrogenated over Pt oxide, but oils were obtained. Oxidation of the Me ester with CrO<sub>3</sub> in AcOH gave an ester identified as Me bisnorcholeate by comparison with a sample prepared from cholic acid by the procedure of Morsman, et al. (C.A. 31, 3062.4). A second acid from the fermentation C<sub>20</sub>-24H<sub>28</sub>-34O<sub>5</sub>-6, m. 248° (decomposition), and had the same qual. tests and solubilities as the other acid.

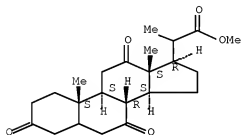
IT 881385-35-9P, 20-Pregnanecarboxylic acid, 3,7,12-trioxo-, methyl ester

RL: PREP (Preparation)  
(preparation of)

RN 881385-35-9 HCAPLUS

CN 20-Pregnanecarboxylic acid, 3,7,12-trioxo-, methyl ester (5CI) (CA INDEX NAME)

Relative stereochemistry.



L26 ANSWER 1 OF 8 HCAPLUS COPYRIGHT 2009 ACS ON STN  
 ACCESSION NUMBER: 2009:61598 HCAPLUS Full-text  
 DOCUMENT NUMBER: 150:214146  
 TITLE: Synthesis of Enantiopure Bicyclic  
 $\alpha,\alpha$ -Disubstituted Spirolactams via  
 Asymmetric Birch Reductive Alkylation  
 AUTHOR(S): Gueret, Stephanie M.; O'Connor, Patrick D.; Brimble,  
 Margaret A.  
 CORPORATE SOURCE: Department of Chemistry, University of Auckland,  
 Auckland, N. Z.  
 SOURCE: Organic Letters (2009), 11(4), 963-966  
 CODEN: ORLEF7; ISSN: 1523-7060  
 PUBLISHER: American Chemical Society  
 DOCUMENT TYPE: Journal  
 LANGUAGE: English  
 ED Entered STN: 16 Jan 2009  
 GI



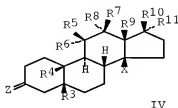
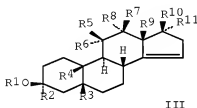
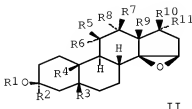
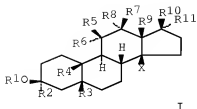
I

AB The synthesis of enantiopure bicyclic  $\alpha,\alpha$ -disubstituted spirolactams is described using a diastereoselective Birch reductive alkylation as the key step. Hydrogenation of the resultant alkylated cyclohexadienes followed by intramol. cyclization provides access to enantiopure 8-azaspiro[5.6]dodecan-7-ones, e.g. I.

REFERENCE COUNT: 37 THERE ARE 37 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L26 ANSWER 2 OF 8 HCAPLUS COPYRIGHT 2009 ACS ON STN  
 ACCESSION NUMBER: 2005:100362 HCAPLUS Full-text  
 DOCUMENT NUMBER: 143:44004  
 TITLE: Total synthesis of 14 beta-fluorosteroids via the  
 transannular Diels-Alder reaction  
 INVENTOR(S): Beaubien, Sylvie; Deslongchamps, Pierre  
 PATENT ASSIGNEE(S): Neokimia Inc., Can.  
 SOURCE: Can. Pat. Appl., 321 pp.  
 CODEN: CPXXEB  
 DOCUMENT TYPE: Patent  
 LANGUAGE: French  
 FAMILY ACC. NUM. COUNT: 1  
 PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
CA 2418458	A1	20040806	CA 2003-2418458	20030206
PRIORITY APPLN. INFO.: CA 2003-2418458 20030206				
OTHER SOURCE(S): MARPAT 143:44004				
ED Entered STN: 04 Feb 2005				
GI				



**AB** A series of novel digitalis steroid analogs, including derivs. containing a 14β-fluoro substituent, I [R1 = H, Me, C2-6-alkyl (optionally substituted with NRbRc or NHC(:NRd)NRbRc), (un)substituted (CH2)nPh, C(:O)Ra, mono-, di-, trisaccharyl, aminoacyl, di-, tripeptidyl; R2 = H, Me, OR1; R3 = H, Me, ORd, OC(:O)Rd; R4 = H, Me, OC(:O)Rd, CHO, (CH2)mORd, (CH2)nNRbRc; R5, R6, R7, R8 = H, ORd, OC(:O)Rd; R9 = H, Me; R10 = H, (CH:CR9)p(CH2)m(CHR9)nA, (CH:CR9)p(CHR12)nA, (CHR9)m(CH:CR9)pB, furyl derivative, furanone derivative, pyranone derivative, pyrazin-4-yl; R11 = H, ORa, OC(:O)Ra; R12 = ORg, NRhRi; NHC(:Y)NRhRi; Rg = Ra; Rh, Ri = Ra with the proviso that, when Rh = H, Ri = NHC(:NH)NH2; Y = O, S, NRA; Ra = H, Me, C2-6-alkyl (optionally substituted with NRbRc or NHC(:NRd)NRbRc), (un)substituted (CH2)nPh; Rb, Rc = H, Me, C2-6-alkyl, (un)substituted (CH2)nPh; NRbRc = 5- or 6-membered monoheterocyclic ring, optionally containing N or O; Rd = H, Me, C2-6-alkyl, (un)substituted (CH2)nPh; X = F1, Cl, Br, I; A = NO2, CO2Ra, CHO, R12, CR9:NR12; B = NO2, CO2Ra, CHO, CR9:NR12; m = 0-6; n = 1-6; p = 0-3), II, III and IV [Z = O, S, NR12], their tautomers, R/S-enantiomers (excluding the steroid nucleus), or E/Z double bonds isomers, have been synthesized. I-IV have been shown to display binding affinity for the ouabain receptor as well as activity in the inhibitions of Na<sup>+</sup>/K<sup>+</sup>-ATPase. These compds. have implications in therapy for a number of medical indications, most notably congestive heart failure, hypertension and cancer. In addition, these mols. can function as natriuretic/diuretic agents and neuromodulators. Multiple methods for the synthesis of these compds. are also presented.

L26 ANSWER 3 OF 8 HCAPLUS COPYRIGHT 2009 ACS on STN  
 ACCESSION NUMBER: 1999:583184 HCAPLUS [Full-text](#)  
 DOCUMENT NUMBER: 131:199937  
 TITLE: Preparation of deoxymannojirimycin from  
 (4R)-3-benzyl-4-(methoxycarbonyl)-2-oxazolidinone  
 INVENTOR(S): Katsumura, Shigeo; Asano, Hiroshi; Murakami, Masanobu;  
 Iwama, Seiji  
 PATENT ASSIGNEE(S): Daiso Co., Ltd., Japan

SOURCE: Jpn. Kokai Tokkyo Koho, 8 pp.  
 CODEN: JKXXAF  
 DOCUMENT TYPE: Patent  
 LANGUAGE: Japanese  
 FAMILY ACC. NUM. COUNT: 1  
 PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
JP 11246524	A	19990914	JP 1998-43381	19980225
JP 3317233	B2	20020826		

PRIORITY APPLN. INFO.: JP 1998-43381 19980225  
 OTHER SOURCE(S): CASREACT 131:199937; MARPAT 131:199937  
 ED Entered STN: 16 Sep 1999  
 GI

\* STRUCTURE DIAGRAM TOO LARGE FOR DISPLAY - AVAILABLE VIA OFFLINE PRINT \*

AB Deoxymannojirimycin, a known anticancer and antiviral agent, is prepared from (4R)-3-benzyl-4-(methoxycarbonyl)-2-oxazolidinone (I; R = OMe) without using expensive and difficult-to-handle reagents in a highly stereoselective method. The process involved treatment of O-(tert-butylidimethylsilyl)propargyl alc. with BuLi in THF/hexamethylphosphoramide at -78° for 1 h and coupling with (4R)-3-benzyl-4-(methoxycarbonyl)-2-oxazolidinone (I; R = OMe) at -100° for 15 min to give propynyl ketone (I; R = tert-BuMe2SiOCH2C.tplbond.C) (65.5%), reduction of the latter ketone with diisobutylaluminum-2,6-di-tert-butyl-4-methylphenoxide in toluene at 0° for 10 min to 4-(1,4-dihydroxy-2-butenyl)oxazolidinone (II) (92.2%), hydrogenation of the latter compound over Lindlar catalyst to N-benzyl-4-(cis-1,4-dihydroxy-2-butenyl)oxazolidinone (III; R1 = CH2Ph, R2 = H, R3 = tert-BuMe2Si) (100%), Birch reduction of the N-benzylloxazolidinone with Na in NH3(l) at -78° to give 4-(cis-1,4-hydroxy-2-butenyl)oxazolidinone (III; R1 = R2 = H, R3 = tert-BuMe2Si) (79.9%), silylation of the latter alc. with tert-butylidimethylsilyl chloride in the presence of imidazole in DMF (96.4%) and selective desilylation with a mixture of 33% aqueous HF and MeCN at -20° for 30 min to give III (R1 = R3 = H, R2 = tert-BuMe2Si) (97.6%). Mesylation of the latter compound with methanesulfonyl chloride 4-dimethylaminopyridine and Et3N in DMF followed by treatment of the crude mesylate (III; R1 = H, R2 = tert-BuMe2Si, R3 = SO2Me) with NaH in DMF at 0° for 1 h gave a bicyclic oxazolidinone derivative (IV) (79.9%) which underwent OsO4-catalyzed dihydroxylation with N-methylmorpholine-N-oxide in a mixture of tert-Bu alc. and H2O at 0° to a diol (V; R4 = H) (85.6%). Acetonation of the latter diol with 2,2-dimethoxypropane in acetone in the presence of pyridinium p-toluenesulfonate at room temperature for 20 h gave an acetonide (V; R4R4 = Me2C) (92.1%) which was refluxed with a mixture of 6 N aqueous NaOH and dioxane for 2 days to 70.7% give deoxymannojirimycin acetonide (VI). Deacetonation was effected by refluxing the latter acetonide in MeOH in the presence of concentrated H2SO4 followed by purification on an ion exchange column (I-X4, OH- form) to give 76.5% deoxymannojirimycin.

L26 ANSWER 4 OF 8 HCAPLUS COPYRIGHT 2009 ACS on STN  
 ACCESSION NUMBER: 1999:512071 HCAPLUS Full-text  
 DOCUMENT NUMBER: 140:253359  
 TITLE: An efficient synthesis of pironetins employing a useful chiral building block, (1S,5S,6R)-5-hydroxybicyclo[4.1.0]heptan-2-one  
 AUTHOR(S): Watanabe, Hidenori; Watanabe, Hiroyuki; Bando,

CORPORATE SOURCE: Masahiko; Kido, Masaru; Kitahara, Takeshi  
Department of Applied Biological Chemistry, Graduate  
School of Agricultural and Life Sciences, The  
University of Tokyo, Tokyo, 113-8657, Japan

SOURCE: Tetrahedron (1999), 55(32), 9755-9776

PUBLISHER: CODEN: TETRAB; ISSN: 0040-4020  
Elsevier Science Ltd.

DOCUMENT TYPE: Journal

LANGUAGE: English

OTHER SOURCE(S): CASREACT 140:253359

ED Entered STN: 18 Aug 1999

GI

\* STRUCTURE DIAGRAM TOO LARGE FOR DISPLAY - AVAILABLE VIA OFFLINE PRINT \*

AB A convergent total synthesis of pironetin (I; R = Me) and related compound I (R = H) using a chiral building block, (1S,5S,6R)-5-hydroxybicyclo[4.1.0]heptan-2-one (II) is described. Both the dithiane III and the epoxide IV with proper substituents were employed as coupling partners to construct the whole carbon skeleton V, which was converted to (-)-pironetin (I; R = Me) and (-)-I (R = H) in few steps. The usefulness of II for polyketide synthesis was demonstrated.

REFERENCE COUNT: 44 THERE ARE 44 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L26 ANSWER 5 OF 8 HCAPLUS COPYRIGHT 2009 ACS ON STN

ACCESSION NUMBER: 1996:299594 HCAPLUS [Full-text](#)

DOCUMENT NUMBER: 125:58151

ORIGINAL REFERENCE NO.: 125:11177a,11180a

TITLE: Synthesis of 3-[1-(tert-butyldimethylsilyloxy)ethyl]-4-carboxymethyl-2-azetidinone derivatives

AUTHOR(S): Seo, Min Hyo; Lee, Youn Young; Goo, Yang Mo

CORPORATE SOURCE: Department Chemistry, Seoul National University,  
Seoul, 151-742, S. Korea

SOURCE: Bulletin of the Korean Chemical Society (1996), 17(4),  
314-321

CODEN: BKCSDE; ISSN: 0253-2964

PUBLISHER: Korean Chemical Society

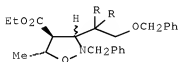
DOCUMENT TYPE: Journal

LANGUAGE: English

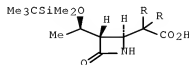
OTHER SOURCE(S): CASREACT 125:58151

ED Entered STN: 21 May 1996

GI



I



II

AB Isoxazolidine derivs. I (R = H, Me) were synthesized from N-benzyl-C-(2-benzyloxyethyl)nitrones by 1,3-dipolar cycloaddn. with (E)-Et crotonate. The

isoxazolidine derivs. were converted to  $\beta$ -amino acid esters by reduction with zinc in acetic acid. The  $\beta$ -amino acid esters were reacted with methylmagnesium bromide to give the 2-azetidionones. The benzyl group of 2-azetidionones were removed by Birch reduction. The products were oxidized with PDC to give 3-[1-(t-butyldimethylsilyloxy)ethyl]-4-carboxymethyl-2-azetidionone derivs II (R = H, Me).

L26 ANSWER 6 OF 8 HCAPLUS COPYRIGHT 2009 ACS on STN

ACCESSION NUMBER: 1993:603806 HCAPLUS [Full-text](#)

DOCUMENT NUMBER: 119:203806

ORIGINAL REFERENCE NO.: 119:36373a,36376a

TITLE: A novel constrained reduced-amide inhibitor of HIV-1 protease derived from the sequential incorporation of  $\gamma$ -turn mimetics into a model substrate

AUTHOR(S): Newlander, Kenneth A.; Callahan, James F.; Moore, Michael L.; Tomaszek, Thaddeus A., Jr.; Huffman, William F.

CORPORATE SOURCE: Dep. Med. Chem., SmithKline Beecham Pharm., King of Prussia, PA, 19406, USA

SOURCE: Journal of Medicinal Chemistry (1993), 36(16), 2321-31  
CODEN: JMCMAR; ISSN: 0022-2623

DOCUMENT TYPE: Journal

LANGUAGE: English

OTHER SOURCE(S): CASREACT 119:203806

ED Entered SIN: 13 Nov 1993

GI

\* STRUCTURE DIAGRAM TOO LARGE FOR DISPLAY - AVAILABLE VIA OFFLINE PRINT \*

AB C7 mimetics, designed to lock three amino acid residues of a peptide chain into a  $\gamma$ -turn conformation, were introduced sequentially between the P3 to P2' positions of a model HIV-1 protease substrate I resulting in compds. I, II and III as probes for conformational requirements in binding to HIV-1 protease. The above I-III were obtained as 2 diastereoisomers. A diastereoisomer of II with the C7 mimetic replacing Asn-Tyr-Pro, corresponding to the P2 through P1' positions of substrate, was found to be an inhibitor with a  $K_i$  of 147  $\mu$ M. Reduction of the amide bond in the C7 mimetic of the above diastereoisomer of II resulted in a novel constrained reduced-amide mimetic IV with a  $K_i$  of 430 nM. This corresponds to over a 300-fold improvement in inhibitory activity over the original C7 mimetic. The inhibitory activity of mimetic IV was in addition found to be 44-fold better than a similar linear reduced-amide containing inhibitor H-Ser-Ala-Ala-Phe $\psi$ [CH<sub>2</sub>N]Pro-Val-Val-NH<sub>2</sub>. The synthesis of these mimetics are described.

L26 ANSWER 7 OF 8 HCAPLUS COPYRIGHT 2009 ACS on STN

ACCESSION NUMBER: 1990:119219 HCAPLUS [Full-text](#)

DOCUMENT NUMBER: 112:119219

ORIGINAL REFERENCE NO.: 112:20211a,20214a

TITLE: A new bis-annulation method. Application to steroid synthesis

AUTHOR(S): Poirier, Jean Marie; Hennequin, Laurent

CORPORATE SOURCE: Lab. Chim. Org., Fac. Sci. Tech. Rouen, Mont Saint Aignan, 76134, Fr.

SOURCE: Tetrahedron (1989), 45(13), 4191-202

CODEN: TETRAB; ISSN: 0040-4020

DOCUMENT TYPE:

Journal

LANGUAGE:

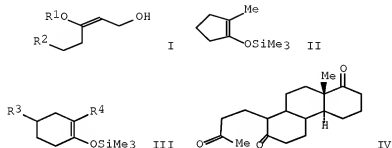
English

OTHER SOURCE(S):

CASREACT 112:119219

ED Entered STN: 31 Mar 1990

GI



AB New bis-annulation reagents I [R1 = *tert*-butyldimethylsilyl, R2 = (2-methyl-2-dioxolanyl)methyl, MeC(:CH<sub>2</sub>)CH<sub>2</sub>; R1 = Me, R2 = CH<sub>2</sub>:CHCH<sub>2</sub>] and R<sub>2</sub>CH<sub>2</sub>CH<sub>2</sub>COCH:CH<sub>2</sub> (R<sub>2</sub> = same) are described. With monocyclic enolates equivalent II and III (R<sub>2</sub> = H, R<sub>3</sub> = Me; R<sub>2</sub> = CMe<sub>3</sub>, R<sub>3</sub> = H), these reagents led to the formation of tricyclic compds. in few steps. The utility of the method is tested for the steroid rings synthesis. Thus, triketone IV was prepared

L26 ANSWER 8 OF 8 HCAPLUS COPYRIGHT 2009 ACS ON STN

ACCESSION NUMBER: 1987:195930 HCAPLUS [Full-text](#)

DOCUMENT NUMBER: 106:195930

ORIGINAL REFERENCE NO.: 106:31748h,31749a

TITLE: Improved methods for the reductive alkylation of methoxybenzoic acids and esters. Applications to the synthesis of bicyclic ketones

AUTHOR(S): Hamilton, Robert J.; Mander, Lewis N.; Sethi, S. Paul  
CORPORATE SOURCE: Res. Sch. Chem., Aust. Natl. Univ., Canberra, 2601, Australia

SOURCE: Tetrahedron (1986), 42(11), 2881-92

CODEN: TETRAB; ISSN: 0040-4020

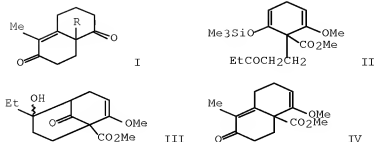
DOCUMENT TYPE: Journal

LANGUAGE: English

OTHER SOURCE(S): CASREACT 106:195930

ED Entered STN: 13 Jun 1987

GI



AB A series of methoxybenzoic acids and esters was reduced by metal-NH<sub>3</sub> solns. and the resulting 1,4-dihydro products were either alkylated in situ or isolated and alkylated subsequently. Three different types of alkyl iodides were employed to introduce the elements of a butanone or pentanone side-chain as a prelude to adding a fused six-membered ring, thereby completing the preparation of several analogs of the Wieland-Miescher ketone I (R = H), in which the angular substituent was oxygenated. Thus, 2,6-MeO(Me<sub>3</sub>SiO)C<sub>6</sub>H<sub>3</sub>CO<sub>2</sub>Me was treated sequentially with K-Me<sub>3</sub>COH in NH<sub>3</sub>, LiBr, and then ICH<sub>2</sub>CH<sub>2</sub>CH(OSiMe<sub>3</sub>)CH<sub>2</sub>Me, followed by Me<sub>2</sub>SO and DCC to give 60% the cyclonexadienecarboxylate II. Treating II with Bu<sub>4</sub>NF in THF gave up to 90% diastereomeric bicyclononenecarboxylates III, which rearranged on treatment with K<sub>2</sub>CO<sub>3</sub> in MeOH to give 75% bicyclodecadienecarboxylate IV. Demethylation of IV with Hg(NO<sub>2</sub>)<sub>2</sub> in MeCN-H<sub>2</sub>O gave 91% I (R = CO<sub>2</sub>Me).

## SEARCH HISTORY

FILE 'CASREACT' ENTERED AT 14:16:38 ON 10 MAR 2009

L1 STRUCTURE UPLOADED  
 L2 0 SEA SSS SAM L1 ( 0 REACTIONS)  
 L3 1 SEA SSS FUL L1 ( 3 REACTIONS)

FILE 'REGISTRY' ENTERED AT 14:23:55 ON 10 MAR 2009

L4 STRUCTURE UPLOADED  
 L5 0 SEA SSS SAM L4  
 L6 22 SEA SSS FUL L4

FILE 'HCAPLUS' ENTERED AT 14:29:17 ON 10 MAR 2009

L7 23 SEA SPE=ON ABB=ON PLU=ON L6  
 L8 23 SEA SPE=ON ABB=ON PLU=ON L7 AND (PRY<=2005 OR AY<=2005 OR  
 PY<=2005)  
 L9 25 SEA SPE=ON ABB=ON PLU=ON KOYAKUMARU K7/AU  
 L10 227 SEA SPE=ON ABB=ON PLU=ON SUGIOKA T7/AU  
 L11 10 SEA SPE=ON ABB=ON PLU=ON OHZONO S7/AU  
 L12 1278 SEA SPE=ON ABB=ON PLU=ON NAKAGAWA N7/AU  
 L13 7 SEA SPE=ON ABB=ON PLU=ON (L9 OR L10 OR L11 OR L12) AND L8  
 L14 2 SEA SPE=ON ABB=ON PLU=ON L9 AND L10 AND L11 AND L12  
 L15 3 SEA SPE=ON ABB=ON PLU=ON L12 AND L9  
 L16 2 SEA SPE=ON ABB=ON PLU=ON L12 AND L10  
 L17 2 SEA SPE=ON ABB=ON PLU=ON L12 AND L11  
 L18 3 SEA SPE=ON ABB=ON PLU=ON (L14 OR L15 OR L16 OR L17)  
 L19 1485 SEA SPE=ON ABB=ON PLU=ON BIRCH REDUCTION/CT OR BIRCH  
 REDUCTION/BI  
 L20 0 SEA SPE=ON ABB=ON PLU=ON L8 AND L19  
 L21 0 SEA SPE=ON ABB=ON PLU=ON L19 AND (L9 OR L10 OR L11 OR L12)  
 L22 575 SEA SPE=ON ABB=ON PLU=ON METAL LITHIUM/BI  
 L23 0 SEA SPE=ON ABB=ON PLU=ON L19 AND L22  
 L24 0 SEA SPE=ON ABB=ON PLU=ON L22 AND (L9 OR L10 OR L11 OR L12)  
 L25 7329 SEA SPE=ON ABB=ON PLU=ON TERT BUTYLDIMETHYLSILYL/BI OR  
 T-BUTYLDIMETHYLSILYL/BI  
 L26 8 SEA SPE=ON ABB=ON PLU=ON L19 AND L25